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AIR CONDITIONING & REFRIGERATION NEWS

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'Sevens' Featured in G-E Line As Key To Replacement Market

Extra Frozen Foods Space, Butter 'Conditioner' Two New Conveniences

BRIDGEPORT, Conn.—New note in General Electric's 16-model electric refrigerator line for 1941 is a shift to 7-cu. ft. deluxe units rather than "sixes" as the logical step-up in capacity and refinements for families buying their second refrigerator.

Paced by three new "sevens," one of them an all-porcelain model, G-E's line comprises four sixes, (one all-porcelain), three "eights" (one all-porcelain), 12 and 16-foot units for large families, and two "threes" and two "fours" for apartment house users.

As reported in last week's NEWS, prices in Zone 2 start at $114.95 for the special six, (LB6) with the other lacquer-exterior models of this capacity priced at $144.95 for the JB6 and $164.95 for the B6 deluxe unit. Model BH7 lists at $184.95, and B7 at $209.95, with JB8 priced at $174.95 and B8 at $229.95.

Burden of the G-E refrigeration story for 1941 rests upon the following "10-star" series of storage and preservation services:

The making and storage of 12 lbs. of ice cubes.

Storage for 20 packages of frozen foods, sufficient for 80 servings.

Quick chilling—near freezing—for bottled and canned beverages, or for extra ice cubes.

High humidity—low temperature storage for as much as 10 lbs. of

(Concluded on Page 36, Column 1)

Philco Unveils Some Startling Changes

CHICAGO, Jan. 8—(Special to AIR CONDITIONING & REFRIGERATION NEWS)—Some radical design improvements were revealed in the 1941 Philco household refrigerators as introduced by W. Paul Jones, vice president in charge of refrigeration, at the company's convention which opened here yesterday.

Probably most startling was a

(Concluded on Page 33, Column 4)

Supply Jobbers To Probe Problems At Annual Conclave

CHICAGO—A program aimed at probing both association and industry problems vital to the supply jobbers welfare has been readied for members of the National Refrigeration Supply Jobbers Association who will convene here in their annual meeting Monday through Wednesday, Jan. 13-15, in the Stevens hotel.

The convention will last through Wednesday, Jan. 15, but the only scheduled item for Monday is an innovation in the form of an open luncheon meeting for all manufacturers and jobbers of refrigeration equipment and supplies—whether they are members of any association or not. Rest of the day will be left open so that the jobbers may inspect the exhibits at the Third All-Industry Refrigeration & Air Conditioning Exhibition.

At this opening luncheon on Monday, scheduled to start at 12:15 p.m., George F. Taubeneck, editor of AIR CONDITIONING & REFRIGERATION NEWS, will give the principal talk, speaking on "The Place of the Job-

(Concluded on Page 29, Column 1)

Westinghouse Sets Low Price At $114.95

MANSFIELD, Ohio—Westinghouse has announced revisions of its price schedule on 1941 refrigerators, most noteworthy of which are $5 reductions which bring its "American Special" AS-6-41 down to $114.95, and the "Betsy Ross" B-6-41 down to $139.95, in the New York zone.

In one upward revision, price of

(Concluded on Page 33, Column 3)

Buffalo Niagara Corp. Quits Merchandising

BUFFALO—Because retailers of electrical appliances in western New York have been maintaining an outstanding selling record, Buffalo Niagara Electric Corp. is withdrawing entirely from the electrical appliance merchandising field, it was announced here by Merrill E. Skinner, vice president of the power company and president of the Electric Association of the Niagara Frontier.

Under the new selling program,

(Concluded on Page 33, Column 1)

Big Session Planned On Appliances At Dept. Store Meeting

NEW YORK CITY—Two sessions of special importance to retailers of electric refrigerators and other major appliances have been scheduled for the afternoon of Wednesday, Jan. 15, in connection with the thirtieth annual convention of the National Retail Dry Goods Association at the Hotel Pennsylvania here.

"Problems in Selling Major Appliances" will be sifted at the major appliance session of the association's

(Concluded on Page 16, Column 1)

Refrigeration's Big Show of the Year Opens Monday as Manufacturers Jam 200 Exhibit Spaces at All-Industry Exhibition

Thank You!

Approval of the editorial policies of AIR CONDITIONING & REFRIGERATION NEWS, plus increased confidence in its value as an advertising medium can be seen in this issue, which is The BIGGEST ISSUE of the NEWS ever PUBLISHED.

Advertising space purchased in this issue breaks by a considerable margin the highest previous total. To all advertisers, and to all subscribers—new and old—come our sincere and hearty thanks.

Management of the NEWS also extends its thanks to the entire industry for helping make 1940 a highly successful year for the Business News Publishing Co. As in the past, profits are being "ploughed back" into new equipment, new personnel, and the development of new ideas. For instance, we have recently purchased our first printing press, and it is now in operation.

Again, we thank you!

Irving Knudson Dies In Arizona

DETROIT—Irving Jacob Knudson, manager of the refrigeration and air conditioning division of Detroit Lubricator Co., died Tuesday morning, Jan. 7, in Tucson, Ariz.

His death followed a long illness. He had gone to Arizona last month

(Concluded on Page 17, Column 1)

G. M. Promotes Newill; Godfrey Succeeds Him In Frigidaire Post

DAYTON—Advancement of Edward B. Newill, since 1937 assistant general manager of Frigidaire and from 1930 to 1937 the company's chief engineer, to the post of assistant to E. R. Breech, vice president of General Motors Corp., has resulted in six consecutive promotions within the Frigidaire organization, reports E. G. Biechler, general manager.

Successor to Mr. Newill as assistant general manager of Frigidaire is

(Concluded on Page 2, Column 5)

Service Engineers Meeting Program Is Star Studded

CHICAGO—With an educational program packed with some new kind of information presented in some "different" ways, and with the entertainment program promising to live up to past R.S.E.S. standards, the annual convention of the Refrigeration Service Engineers Society opens Jan. 13 in the Stevens hotel.

Among the highlights of the star-studded program are the "Take-It-Or-Leave-It" session on Wednesday morning, to be conducted by L. C. McKesson of Ansul Chemical Co., combining useful information and prizes.

The R.S.E.S. will meet in the mornings only, so that members can devote their afternoons to the Third

(Concluded on Page 19, Column 1)

Expect 10,000 Visitors, Big Banquet Is Tuesday

CHICAGO—The "Big Show" opens its doors 10 o'clock Monday morning, Jan. 13, in the Stevens hotel, with a record number of exhibits signed up, and a record turnout by members of the trade a sure thing prediction.

Known formally as the Third All-Industry Refrigeration and Air Conditioning Exhibition, the show has very close to 200 exhibit spaces already contracted for, and some that may be sold between the time this issue of the NEWS goes to press and the Show opens will probably push it past that figure, for a new record for the Show.

The Show will last until 4 p.m. Thursday afternoon and will run from 10 a.m. until 10 p.m. on Monday and Wednesday. On Tuesday the doors will close at 6 p.m. to permit attendance at the Third All-Industry Banquet, at which members of the industry will relax for one long evening of entertainment.

The committee in charge of the Show has planned facilities for 10,000 registrants, but it is expected that attendance may pass that figure.

For the first time two exhibition halls are required to house the displays—the regular Stevens exhibition hall on the lower floor level, and the other composed of the mezzanine floor and adjoining Boulevard Room.

The official and only registration headquarters—for everyone attending the Show—will be located on the main lobby floor, immediately inside the hotel's Michigan Ave. entrance.

Everyone should present his registration card (filled out in advance

(Concluded on Page 10, Column 1)

N.A.C.A. To Reveal New Program For Air Cond. Dealers

NEW YORK CITY—The second annual convention of the National Air Conditioning Association will be held at the Blackstone hotel, Chicago, Jan. 13-14, concurrently with the All-Industry Refrigeration and Air Conditioning Exhibition.

Registration will begin at 9 a.m. Monday Jan. 13, and all meetings will be held in the Crystal room of the Blackstone. The opening session at 10 a.m. schedules roll call, reading of minutes, election of members of the board of directors, election of new members, reports of officers, reports of committees, and reports from members on conditions in the industry.

At 12:30 p.m. NACA members will meet for luncheon, and during the

(Concluded on Page 4, Column 1)

Association Formed By Room Cooler Men

WASHINGTON, D. C.—A room cooler division has been formed by the Air Conditioning & Refrigerating Machinery Association, Inc., reports S. E. Lauer, ACRMA president. Membership in the new division will be limited to those association members engaged in the manufacture or sale of self-contained room coolers in capacities up to 15,000 B.t.u. per hour.

Principal activities of the room

(Concluded on Page 2, Column 5)

Rema's President Issues Invitation To All-Industry Show

As president of the Refrigeration Equipment Manufacturers Association it gives me great pleasure to extend a cordial invitation to all readers of AIR CONDITIONING & REFRIGERATION NEWS, their business associates, and their customers, to attend the Third Annual All-Industry Refrigeration and Air Conditioning Exhibition.

This All-Industry Refrigeration and Air Conditioning Exhibition is the one time in the year when the entire industry has the opportunity to meet together and tell one another what is going on in the industry and to see what the many manufacturers will have for the coming season.

This year the manufacturers have more than ever to show—more new products and products from a larger number of exhibitor firms than have ever before participated in the All-Industry Show.

Aside from the immediate advantages which will accrue to those who will attend this

year's All-Industry Show, through the contacts they will make with exhibitor companies and with many others in the trade, the Show itself is of greater importance to the refrigeration and air conditioning industry from an entirely different aspect.

As never before it will focus public attention on the refrigeration and air conditioning industry. Trade reports of the convention and meetings to be held in conjunction with it will be broadcast from one end of the country to the other through newspapers, trade journals, and by word-of-mouth.

With improved general business conditions a certainty, plus the impetus that will come out of the All-Industry Show to everyone participating in and attending it, 1941 should be the greatest air conditioning and refrigeration year in the industry's history.

This invitation is extended in the sincere belief that all of our guests attending will return to their homes and business responsibilities repaid many times over.

Sincerely,

E. A. VALLEE, President,
Refrigeration Equipment
Manufacturers Association

Dallas Service Engineers See Maintenance Contracts as Threat To Their Welfare

DALLAS, Tex. — That the so-called "guaranteed" refrigeration maintenance contract is foredoomed by its very nature to fail, but a potent threat to the welfare of the industry as a whole was the general view brought out at a meeting here of members of the refrigeration service engineers organization.

The contract complained against is an innovation in Dallas, which thrust itself into the forefront several months ago. It binds the service man not only to inspect and service equipment, but to replace whatever parts may be required. For this fees as low as less than $2 monthly for single units have been listed.

A wide rift within the trade in Dallas, which also has begotten deep bitterness, has been one of the results of this variety of project. Price cutting has been resorted to as device to meet its threat; and in the belief of many service men, chaos has been hovering over the business here.

At a recent meeting of service men the subject was discussed thoroughly. One of the contract operators took leading part in the discussion, asserting it to be his intention to meet competition of this sort in kind. He admitted freely that the practice ultimately would result in the probable breaking of the operator himself and work deep injury to the whole group.

He declared and reiterated that his action was motivated by an intention to fight the contract out of the field. He further asserted that this policy seemingly had accomplished its purpose and that he now was engaged in cancellation of such contracts as he held.

The so-called guarantee contract has fomented a deep and often belligerent antagonism within the ranks of the service engineers in Dallas, and has been a genuine threat to the solidarity of the group which was sought and partially achieved last Spring after a considerable period of internal strife over the issue of becoming associated with a national group.

The general view found to obtain among service men is that proponents of such plans must be operators of considerable financial stature, otherwise they cannot possibly hope to carry out terms of their agreements; and that lacking that financial base, and unable to obtain it in form of bond or insurance, they cannot avoid being overwhelmed.

Anemostat Corp. Gives Dividend & Bonus

NEW YORK CITY—Directors of Anemostat Corp. of America have announced a dividend of 25 cents per share for the year 1940. Christmas bonuses were distributed to all employes of the company.

Stuart Hodgdon Starts New Service on Service

POLAND, Me.—Stuart W. Hodgdon has recently established a new contracting and service organization here, specializing in installations and servicing for manufacturers throughout the state. The company is authorized installing contractor for McCray Refrigerator Co. in Maine.

In addition to its installation and service work, the company also operates a machine shop equipped for complete rebuilding work, Mr. Hodgdon reports.

Automats All To Have Automatic Cooling

PHILADELPHIA — Horn & Hardart, operators of "automat" and cafeteria-type restaurants, have adopted a policy of "100% air conditioning as soon as economically possible." During 1940 the company air conditioned 17 of its units.

They Go Up

E. B. NEWILL

EDWARD R. GODFREY

• • •

Newill and Godfrey In New Positions

(Concluded from Page 1, Column 4)

Edward R. Godfrey. Mr. Godfrey has been head of Frigidaire's manufacturing division since he became associated with the company in 1930. Previous to 1930, he had been superintendent of the General Motors Delco-Remy plant in Anderson, Ind.

With the advancement of Mr. Godfrey to the assistant general managership, his former position will be taken by Mason M. Roberts, who relinquishes his post as superintendent of Frigidaire's Moraine City plant. Mr. Roberts in his new position will be known as manager of plants and will have supervision of all manufacturing operations. His assistant will be Russell V. Polen, formerly assistant to Mr. Godfrey.

In another executive transfer, George R. Auld, who has been superintendent of the company's Taylor street plant, has been made general superintendent of a new plant Frigidaire is building to house operations in connection with the government's defense program.

Other changes include the promotion of Scott L. Davis, formerly assistant to Mr. Auld, to the position of general superintendent of the Taylor St. plant, and J. W. Krueger as general superintendent of the Frigidaire plant.

New Room Cooler Group To Seek Clearer Ratings

(Concluded from Page 1, Column 5)

cooler division will be the compilation of industry statistics of sales and inventories, equipment standardization, and standard ratings and testing and certification of capacities of various models of room coolers.

Of industry interest is the association's classification of the size or capacities of room coolers in B.t.u. rather than in what it terms "the generally used, but now almost meaningless, 'horsepower.'" On this the association comments: "As motor nameplate ratings, notably in the smaller sizes, are far from reliable guides, it is logical that the air conditioning industry should seek a less elastic yardstick by which customers may measure value."

NOW APPLIANCE DEALERS CAN PROFIT

FROM THE

SWING TO FROZEN-FRESH FOODS!

Deepfreeze

FROZEN-FOOD SAVER AND MEAT FREEZER

See the Deepfreeze EXHIBIT

Booth 27—Refrigeration Show
Stevens Hotel—Chicago
January 13-16

Brings Back the Good Old Dollar Profits of the $225 Appliance

Deepfreeze offers new profit opportunity to aggressive appliance dealers, for Deepfreeze gives the families of America better living—cheaper! Delicious, more healthful food—with *lower* meat and grocery bills, strikes quick response from modern housewives—makes new live appliance prospects of old customers.

Full, old-time profits, from sales untouched by trade-in worries or chain store competition, bring the carefree blush of prosperity to dealers' bank deposit slips. Strong national advertising and sales material help pave the way for Deepfreeze Dealers' progress. See us at the Chicago show, or wire for complete information.

DEEPFREEZE DIVISION OF MOTOR PRODUCTS CORPORATION
NORTH CHICAGO • ILLINOIS

Tops in Preference

--BECAUSE IT'S TOPS IN PERFORMANCE!

"IT'S G-E FOR ME!"

NEWS!

about the new G-E ALL-STAR REFRIGERATOR

It's "Hats Off" to the new 1941 G-E All-Star Refrigerator at G-E Dealer Previews everywhere! Exciting new beauty, New 10-Star Storage Features including the New Butter Conditioner and New Dry Storage Drawer. No wonder public preference for the G-E will be even greater in 1941.

MORE PEOPLE PREFER THE GENERAL ELECTRIC REFRIGERATOR THAN ANY OTHER MAKE . . . . A powerful statement, backed by recent independent consumer surveys made by four national magazines among refrigerator owners and prospective buyers. Over 50% more people expressed a preference for G-E than mentioned the next leading brand!

THE GENERAL ELECTRIC THRIFT UNIT HAS ESTABLISHED THE GREATEST PERFORMANCE RECORD IN AMERICA . . . . Another powerful statement backed by years and years of faithful service in millions of homes. That's the reason for the tremendous public preference for G-E. That's why G-E dealers and salesmen say "Ask Your Neighbor!" It's the best sales closer of all.

GENERAL ELECTRIC

National Air Conditioning Association States Its Aims and Program

Dealer Aid Will Be Discussed At Second Annual Convention In Chicago, Jan. 14; Some Manufacturers Pledge Support

(Concluded from Page 1, Column 5)

afternoon will visit the All-Industry Exhibition at the nearby Stevens hotel.

Tuesday, Jan. 14, a meeting of the association's board of directors is scheduled for 10 a.m. At this time the officers for the coming year will be elected and policy for the year determined. A luncheon meeting of members is planned for 12:30 p.m.

During the afternoon, a forum meeting will be held starting at 2 p.m., and a general discussion of industry problems will be held. At 6:30 p.m. NACA members will attend the All-Industry Banquet, floor show, and dance in the Grand Ballroom of the Stevens.

In connection with the second convention of the association, Jesse W. Page, Jr. of Page-Williamson, Inc., Charlotte, N. C., president, has voiced "An Appeal for Cooperation in the Air Conditioning Industry." Writing in the NACA Digest, he says: "We are indeed pleased with the cooperation we have had to date from members of the National Air Conditioning Association, and especially from the leaders of the industry who have joined our association as associate members.

"Their contribution in dues has made it possible for us to publish the first issue of the NACA Digest. . . . There is no conflict whatsoever with any other trade association or technical society as now organized. Our aim is to complement each organization now existing and to cooperate with everyone in the industry for the general welfare of all.

"Your officers and directors believe that the main purpose of the NACA is to encourage an educational program on the part of the entire industry and to dispel the feeling on the part of the public that air conditioning is a mystifying theory instead of a practical necessity for comfort, health, and welfare.

TO BE 'MEDIUM OF CONTACT'

"It is a primary function of NACA to serve as the medium of contact between various component parts of the industry. Our membership now includes consulting engineers, national manufacturers, suppliers of parts as well as contractors, and dealers throughout the country."

In answer to the question, "What Do I Get Out of It?," A. C. Buensod, treasurer of NACA elected following the resignation of John H. Keller of Detroit, says: "Last January, after a year's discussion, 40 men engaged in selling and handling of air conditioning decided to form an organization called the National Air Conditioning Association. The purpose, as expressed in the Constitution of this association was to 'advance the sound development of the air conditioning industry in the interest of public service.'

"The writer attended this organization meeting out of curiosity and as an observer. Like many others, he was adverse to joining any more associations, technical societies, or what not. But after listening to the discussion at the first meeting, he was convinced there was a need for this association, and that there was a place for it, because no other existing group completely fills the bill.

"Everybody in the industry complains about the manifold problems, the low prices, etc., yet like the weather, nobody does anything about it.

"My belief is that we first educate ourselves and if, in turn, we educate the public that pays the freight, maybe we will deserve better business. It is for this reason that a National Air Conditioning Association, supported by all those in the industry, from the sheet metal man on up to the big manufacturer, should be valuable. The main function of the association is education.

"Everyone in this business, small or large, likes to know what others are doing. Like parrots, we copy from each other. If we copied only the good things, we would all profit by raising the general level of the industry in the interest of public service. Means must be found for giving the public greater value for less money and then we can enjoy greater volume and more profits.

"The NACA naturally cooperates with the technical societies that have done so much for the industry. There is no reason for it to engage in research or the technical problems so ably handled by the technical societies. Therefore, there is no reason why we should not have the cooperation of all the technical societies.

NO HELP TO 'FINAL OUTLET'

"The same reasoning applies to the trade associations. Our excellent manufacturer's associations are primarily interested in the problems of production and distribution in the largest phases, not in the problems of the final outlet.

"The Heating, Piping, & Air Conditioning Contractors National Association is primarily interested in selling and installing, and is doing excellent work for the industry, but it does not furnish a meeting ground for all any more than the manufacturers' associations do.

"One of the obvious objectives of the organization is to cooperate with the present local air conditioning councils and bureaus in each city and to foster and assist in the organization of other councils and bureaus. These councils have their place in the local territory, because every local territory has its own problems, its own promotional work, its own geographical climate, and can only be handled by such a strong organization locally. The NACA can and should cooperate with all of the various local groups for the common welfare.

"As the NACA grows, there are many national problems such as trade barriers, safety codes, regulations for the installation of the systems as suggested by the National Board of Fire Underwriters which are national in scope and which always conflict with some local, municipal, or state ordinance. Every time there is a conflict of this kind, it causes the industry annoyance and thereby inflicts a hardship on the individual owners to whom we are all indebted."

"If we in the air conditioning business do not merit more business, we have no one to blame but ourselves. It is our earnest desire that many individuals and firms in our industry will look at it the way we do, and help by becoming members."

MANUFACTURERS SAY - - -

Individual reactions to the program of the NACA have been received from a number of people in the air conditioning industry. In a letter to Mr. Buensod, Willis H. Carrier, chairman of the board, Carrier Corp., says: "I have read your article in reference to the National Air Conditioning Association. I think you have put up a very strong case for the association. I believe it is a good move if firmly enough established to get some place. The purpose of the association, as expressed in the constitution, is excellent. I am glad that you are helping in this move."

C. A. Booth, of Buffalo Forge Co., comments: "There should be room for an association of air conditioning contractors operating in this special field, without interfering either with the Heating, Piping & Air Conditioning Contractors National Association on the one hand, or with Air Conditioning Councils which are interested in local problems, and mostly in engineering.

"Your association, I suppose, intends to be largely promotional and to supply information that the small contractor needs. . . . We are glad to cooperate by going along as an associate member for $100, and hope there will be enough others who feel the same way about it that you will not be hamstrung for the wherewithall to get your work started."

J. W. Bostwick, manager, Air Conditioning Division, Fairbanks, Morse & Co., says: "Our enthusiam for such an organization has not cooled one iota, as we feel that an organization with the aims that you have set forth will be extremely valuable to manufacturers as well as contractors. You may rest assured of our full cooperation, should this organization be set up on a business-like basis.

"You are also assured that all of our branch houses will give you full cooperation on any local plan that you might have, in the many cities throughout the country."

Fred K. Taylor, vice president of Taylor Instrument Co., points out that "The question of membership in trade associations has always been a problem with us—more so, perhaps, than many suspect. This is due to the fact that our business takes us into all of the country's industries and naturally there is a heavy demand on us to join this and that association and to put on exhibits.

"These things are naturally very costly. . . . However, our confidence in you is such that your recommendation in this case is sufficient, and we are going to apply for an associate membership in the new association."

Officers of the National Air Conditioning Association are Jesse W. Page, Jr., president; J. N. Sprekelmeyer, General Engineering Corp., Fort Worth, Tex., vice president; A. C. Buensod, Buensod-Stacey Air Conditioning, Inc., New York City, treasurer; and A. C. Callahan, New York City, executive secretary.

CARRIER...for NEW PROFITS in your slack seasons

- **Year 'round profits**
- **Better satisfied salesmen**
- **Nationally advertised**
- **Backed by air conditioning and refrigeration's most famous name — CARRIER!**

Dealers! Here's the chance you've been waiting for—to fill in your slack seasons with a world famous line of equipment, fast selling, profitable, prestige-building.

Carrier wants a few additional dealers for parts of its complete year 'round lines. These dealers can add new products for air conditioning, refrigeration or heating to fit in with their present selling. To these, Carrier offers a Franchise WORTH REAL MONEY:

1. A selection from the complete line of air conditioners, humidifiers and ventilators.
2. Home heating equipment, including Conversion Burners and Boiler-Burner Units with or without air conditioning. Also Unit Heaters.
3. A most complete line of Commercial Refrigeration equipment.
4. Sales training and promotional support by the only company with 39 years exclusive experience with AIR CONTROL.
5. Complete territorial protection!

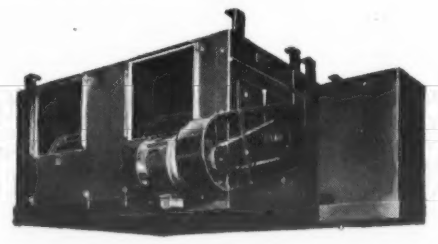
Frankly, we do not expect available territories to remain open long. So write or wire for full details on Carrier's valuable Restricted Franchise Arrangement NOW. Or clip coupon.

Air Conditioning's FIRST NAME

Carrier

AIR CONDITIONING

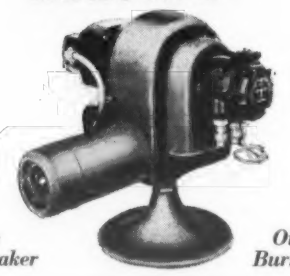
Room Weathermaker



Suspended Type Weathermaker

RESIDENTIAL HEATING

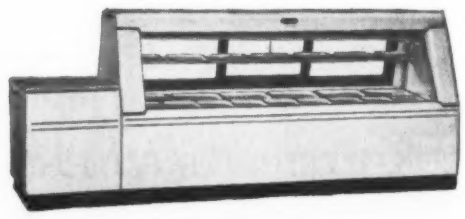
Home Weathermaker



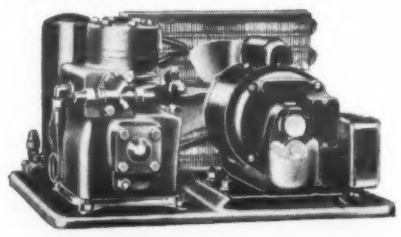
Oil Burner

COMMERCIAL REFRIGERATION

Cold Diffuser



Display Case



Reciprocating Compressor

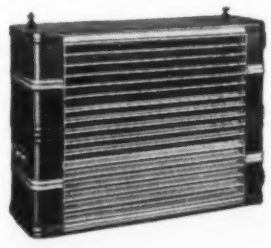
Water Cooler

ROOM HUMIDIFIERS and VENTILATORS

Humidifier

Portable Room Ventilator

UNIT HEATING



Carrier Unit Heater

TEAR OUT COUPON NOW

CARRIER CORPORATION, SYRACUSE, N. Y. Desk A12
"Weather Makers to the World"
(In Canada, 30 Bloor St., West, Toronto, Ont.)

Please send complete details on the new Carrier Dealer Franchise for ☐ Air Conditioning ☐ Commercial Refrigeration ☐ Unit Heating ☐ Home Heating and Air Conditioning.

NAME.....

COMPANY.....

ADDRESS.....

On your mark! Get set! GO!

Fedders is out in front for '41

...and here's why

Buy Fedders in 1941 and you will get MORE than a complete line of refrigeration products.

What do we mean?

Just this...you will get all the PLUS advantages of FEDDERS QUALITY...all the PLUS advantages of FEDDERS ADVANCED ENGINEERING...all the PLUS advantages of FEDDERS 45 YEARS OF HEAT TRANSFER EXPERIENCE...all the PLUS advantages of FEDDERS EXPERIENCE...PLUS big volume production economy, buying power and ASSURANCE OF DELIVERIES OF MATERIALS.

PLACE YOUR BETS ON FEDDERS

See the Fedders line-up of 1941 Products at the show. You will get an eyeful! New Wall and Ceiling Unit Coolers...New Valves...New Condensers...New Ice Cube Makers,—and that's only part of the Fedders set-up for 1941.

Fedders is set for action in 1941. You will get the story at the show. 'NUFF SAID! See you at the show.

FEDDERS MANUFACTURING COMPANY, INC.
BUFFALO, N. Y.
Atlanta Boston Chicago Cincinnati Dallas Detroit Los Angeles New York Philadelphia St. Louis Hamilton, Ont.

MEET THESE WINNERS AT FEDDERS BOOTHS No. 92 and 93
Hotel Stevens Chicago
Jan. 13th to 16th

Take advantage of fedders 45th Anniversary as Heat Transfer Specialists

Who's Who Where

V. C. Knight Named Chief Engineer of McCray to Succeed G. J. Hopkins

V. C. KNIGHT

* * *

KENDALLVILLE, Ind. — V. C. Knight has been appointed chief engineer of McCray Refrigerator Co., succeeding G. J. Hopkins, who has resigned because of ill health. Mr. Knight also replaces Mr. Hopkins as a member of the executive committee of the company.

Mr. Knight joined the McCray organization in 1925, and two years later was given charge of the southern sales district, with headquarters at the factory. After five years of service in this capacity, he became distributor for McCray in the Fort Wayne, Ind. territory, a post which he held for several years. He also was with Frigidaire as a sales engineer, working out of the Fort Wayne office.

E. W. Jones Selected To Build Hall Sales Force

CEDAR RAPIDS, Iowa—E. W. Jones, formerly sales manager of Pelco and later with Undabar Cooler Corp. in a similar capacity, has joined the Hall Mfg. Co. organization, where he will be in charge of the building of a national sales organization on the new line of beverage cooling equipment being marketed by that company.

The Hall line includes ice and mechanical direct-draw draft beer equipment, wet and dry type bottle beverage coolers, a low-temperature chest adaptable to either home or commercial use, and allied products in the household and commercial field.

Emmett, Hage, and Kluger Promoted By Marsh

CHICAGO — Three promotions in the sales organization of Jas. P. Marsh Corp. have been announced by A. D. Rose, general sales manager.

James Emmett, Jr. has been appointed assistant sales manager, O. William Hage has been named manager of the gauge division, and E. C. Kluger has been placed in charge of the heating division. All three men have been in the Marsh organization for a number of years, and are well known in the refrigeration and heating field.

Harold B. Donley Named To Wesco Sales Post

NEW YORK CITY — Harold B. Donley, formerly manager of the appliance department of the Westinghouse merchandising division at Mansfield, Ohio, has been named merchandise sales manager of Westinghouse Electric Supply Co. with headquarters here. The appointment was effective Jan. 1.

In his new position, Mr. Donley will supervise all home appliance sales for Westinghouse Supply Co., and will maintain contact with the merchandising division. He also will have charge of the marketing of products of other manufacturers handled by the Supply Co.

Mr. Donley has been with Westinghouse for 18 years, and has worked in Mansfield since joining the company. Starting as a sales clerk on appliances and ranges, he was later named a field contact man working with distributors and dealers on appliance merchandising.

In 1932 he was named manager of heating appliance sales, and later commercial and household fans and vacuum cleaners were added to his products. He has been manager of the appliance department in the merchandising division for the past five years.

Hoover Named Head Of Crosley Publicity

CINCINNATI—Harold S. Hoover, formerly associated with the publicity division of General Tire & Rubber Co., has been named director of publicity for the manufacturing division of Crosley Corp.

Jackson Joins G-E Supply

BALTIMORE — Hal Jackson, formerly associated with the Electric Institute of Washington, has been appointed eastern shore representative for the Baltimore branch of General Electric Supply Corp. on electric refrigerators, radios, ranges, and other appliances.

Pflibsen To Buy for Ward

CHICAGO—E. F. Pflibsen has been appointed assistant buyer of electrical housewares for Montgomery Ward & Co. He succeeds Harold Wiscomb, who has resigned. Mr. Pflibsen, who was formerly assistant divisional merchandise manager of housewares of Ward's, will assist H. C. Foerster, buyer of electrical appliances.

New Filter Distributors

MADISON, Wis.—Three new distributors of its air filter line have been appointed by Research Products Corp. P. J. O'Meara Co., San Franciso, will cover northern California and part of Nevada; Harrison Sales Co., Seattle, will cover Washington, Oregon, British Columbia, and part of Idaho; and Trade-Wind Motorians, Inc., Los Angeles, will cover Arizona, part of Nevada, and southern California.

Heads Crosley Purchasing

CINCINNATI—J. E. Lautsbaugh, for the past 22 years director of purchases for Westinghouse Electric & Mfg. Co. at Mansfield, Ohio, has been appointed director of purchases of all products of Crosley Corp.

Hotpoint Dealership Opens

JONESBORO, Ark.—Whidden & Thomas Appliance Co. has opened an office at 107 East Huntington Ave. here as agency for Hotpoint refrigerators and ranges, and Zenith radios. Owners of the firm are John P. Whidden, Jr. and Morris B. Thomas, both of whom have had wide experience in the electrical appliance field.

Arkansas Firm Adds G-E

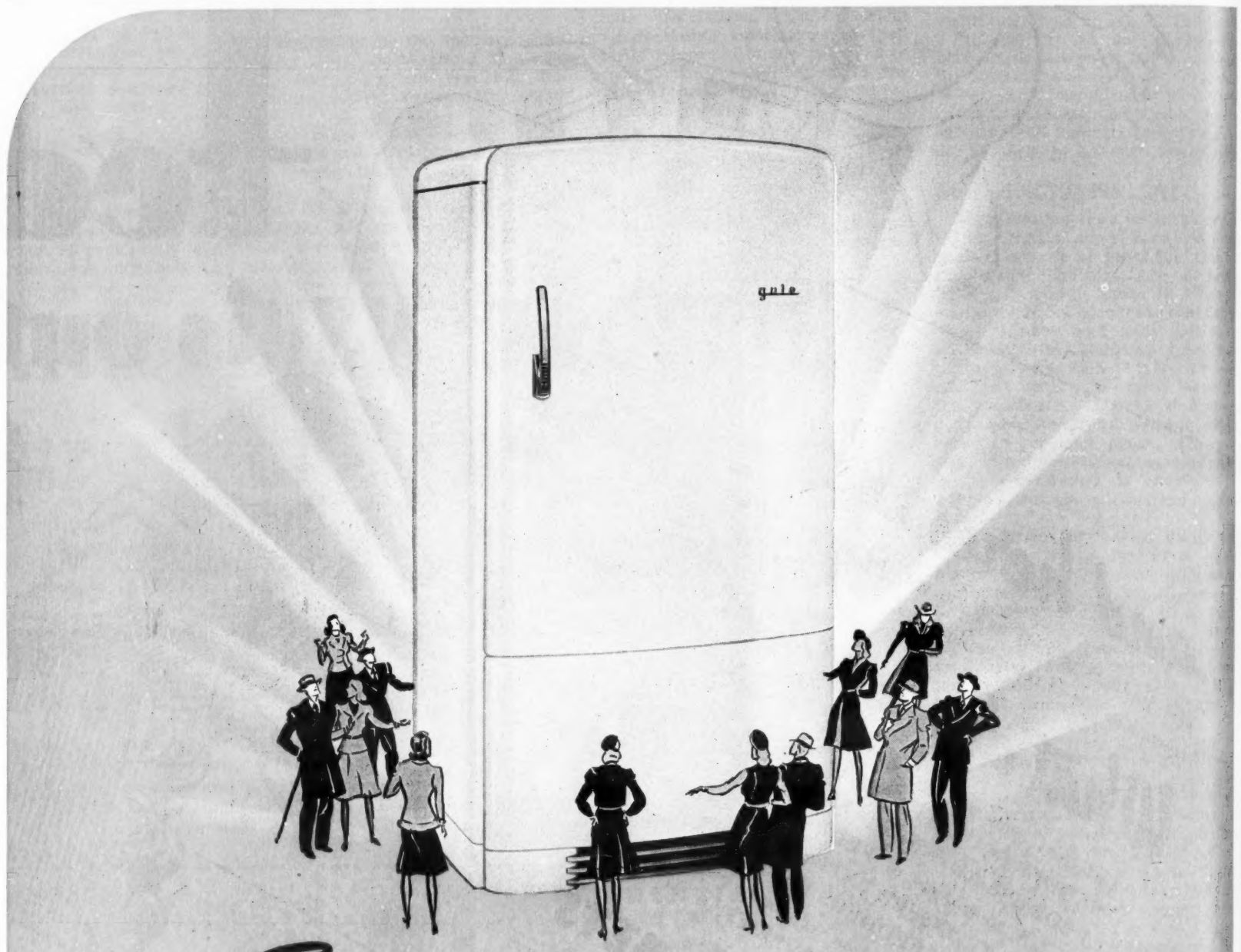
WYNNE, Ark.—East Arkansas Electric Supply Co., managed by Walter Edan, has taken on the General Electric appliance line. Besides the store here, the company also operates stores at Parkin and Earle, Ark.

Rainwater Takes on Gibson

FLORENCE, S. C.—Home Furnishing Co., owned and managed by J. M. Rainwater, has taken on the Gibson line of refrigerators and ranges, and Zenith radios. A treasure hunt attracted quite a crowd to this firm's appliance opening.

Loughlin & Godwin Moves

HENDERSON, N. C.—To obtain improved facilities for appliance display, the electrical department of Loughlin & Godwin has moved into new quarters here. Edward Loughlin is manager of this department.



Extras for the consumer mean extra profit for you

Choose by comparison! That's what *your* customers are going to do! Why don't *you* do the same? What do you need to sell refrigerators and make money? Is it beauty? Performance? Deluxe equipment? Dependability? Economy? A complete line? A "break" on price? Gale gives you *all* these things *plus* a clean-cut, straight-from-the-shoulder deal that lets *you* make money.

Gale lets you give your customer more for his money without cutting into your own margin. Prospects recognize and appreciate Gale 'extras'! Get Gale on your floor. Turn these prospects into sales!

Gale
ELECTRIC REFRIGERATORS

Distributor-Dealer Doings

Southern Appliance Co. Moves To New Store

MEMPHIS, Tenn.—Southern Appliance Co., Frigidaire dealership here, has moved into a new location at 1070 Union Ave., directly across the street from McGregor's, Inc., Frigidaire distributor. Herbert Streuli is president of the company.

Obie M. Koon Opens Dallas Retail Store

DALLAS, Tex.—Obie M. Koon, for several years an electrical appliance distributor here, has opened a retail store in a remodeled and brilliantly lighted building at the corner of Beckley and Jefferson Ave. Five outside salesmen are employed at present.

Deluxe Trailer Selling Makes Bow In Calif.

ALHAMBRA, Calif.—A "deluxe" touch has been added to trailer selling of electrical appliances by Alhambra Furniture Co., Frigidaire dealership here. On one side of the trailer, a 10-foot luxury model, are three comfortably upholstered benches, where the prospect can be seated while the salesman puts each appliance through its paces.

The trailer is equipped with its own generator, for use where plug-in current is not available, and has facilities for three major appliances —usually a refrigerator, range, and washer, all ready for operation.

Another "plus" sales touch is added by 5 x 5 signs mounted on an interchangeable bracket outside the trailer, which converts the unit into a veritable "rolling billboard" for the dealership as it makes its rounds.

Engedal Co. Purchases Menominee Hdwe. Co.

MENOMINEE, Mich.—The L. O. Engedal Co., Marinette, Wis., has purchased the assets of the Menominee Hardware Co., appliance dealership, from Conrad Hedstrom and Harry Ludig, and will continue to operate the firm under the same name.

274-Unit Contract

OMAHA, Neb.—The Omaha Housing Authority has awarded a contract to Major Appliance Co. here for the furnishing and installing of 274 electric refrigerators in the Logan Fontenell Homes.

Oshkosh Dealer Moves

OSHKOSH, Wis.—Peenau's, appliance dealership here, recently held formal opening of its new location at 146 Main St.

Tenk Hardware Passes 75th Year In Business

QUINCY, Ill.—Tenk Hardware Co., distributor of Crosley major appliances in this territory, celebrated its seventy-fifth year in business in 1940. Started in 1865 as a retail hardware store under the name of H. & J. H. Tenk, the firm was incorporated under its present name in 1891. Wholesale operations were inaugurated in 1870. Present headquarters of the company are at 121-125 S. Fifth St.

In addition to Crosley products, the company also distributes Universal and Sunbeam appliances, hardware, automotive supplies, and sporting goods. Rudolph Tenk, now in his fifty-fifth year of service, is president of the company; N. B. Getty is vice president; C. H. Brooks is secretary; R. L. Witzleben is assistant secretary; F. B. Wensing is sales manager; W. V. Petry is credit manager; and W. E. Hufendick is manager of the mail order department.

MKB On the Air

A series of 16 radio transcriptions has been prepared by Modern Kitchen Bureau as a water heater promotional aid for 1941.

* * *

Range Program Will Stress Male Cookery

NEW YORK CITY—Cashing in on the current vogue toward male cookery, Modern Kitchen Bureau's spring electric range campaign for 1941 has been titled "The He-Man Recipe Round-Up" and will feature championship cooking contests for men in local communities.

Slogan of the electric range campaign will be "Switch to Switches," and the entire promotion will be developed on the general theme of "The biggest year in history for the electric range."

The bureau's electric water heating campaign for the year will be known as the "Electric Water Heater Jubilee," and will be built around a similar theme, "The greatest year yet in electric water heater popularity." Featuring the water heater drive will again be the ever-popular Donald Duck, assisted this year by his three nephews.

LOCAL COOKING CONTESTS

Cooking contests for men have proved popular wherever held, and the bureau's electric range campaign will afford participating dealers an opportunity to stage such contests for the local championship. After men have tried out the new electric ranges during the contest, it will be much easier to get such equipment into the home, it is believed.

Promotional materials will be available to dealers for use in staging their cooking contests, feature of which is a store or window display conceived by James Montgomery Flagg, noted illustrator and amateur cook. There also will be a recipe book containing the favorite recipes of many famous men, and a plan for a cooking school demonstration of these recipes.

DIPLOMAS FOR 'HE-MEN'

Certificates of merit for men who qualify as "He-Man Cooks" also will be available, as will placards and display cards announcing the competition and offering the free recipe book.

Program of national advertising on the electric range drive will be expanded considerably this year, and will include McCall's, Better Homes and Gardens, Good Housekeeping, Woman's Home Companion, and Ladies' Home Journal.

Electric water heater program for 1941 will be amplified by the use of radio, for which a series of 16 brief transcribed programs has been prepared.

A new national contest—for the best floor demonstrations of electric water heating—will be included for the first time in the 1941 program. The over-all contest for utilities which do the best all-around job of water heater promotion and sales, and the contest for the best water heater window displays will both be repeated. Prize money in these three contests totals $2,000.

Louisville Wemco Head Dies

LOUISVILLE, Ky. — Thad W. Voils, for 15 years manager of Westinghouse Electric & Mfg. Co.'s Louisville branch, died here Dec. 4. He was 50 years old.

GALE 6-ft. "Royal"
GALE 6-ft. "Regal"
GALE 4-ft. "Compact"
GALE 6-ft. "Challenger"
GALE 6-ft. "Champion"
GALE 8-ft. "Commodore"
GALE 6-ft. "Supreme"
"GALE BUILDS REFRIGERATORS THAT SELL - - - AND PAYS YOU WELL TO SELL THEM. GET STARTED TODAY"

Full Range of Sizes, Price, Equipment

7 models. Fewer to stock — less money in inventory. BUT — they cover the whole market, so that "step-up" selling is logical and easy. There are *no* "leaders"— each step *up* gives *you* more profit. No quotas, no high pressure to handicap your selling.

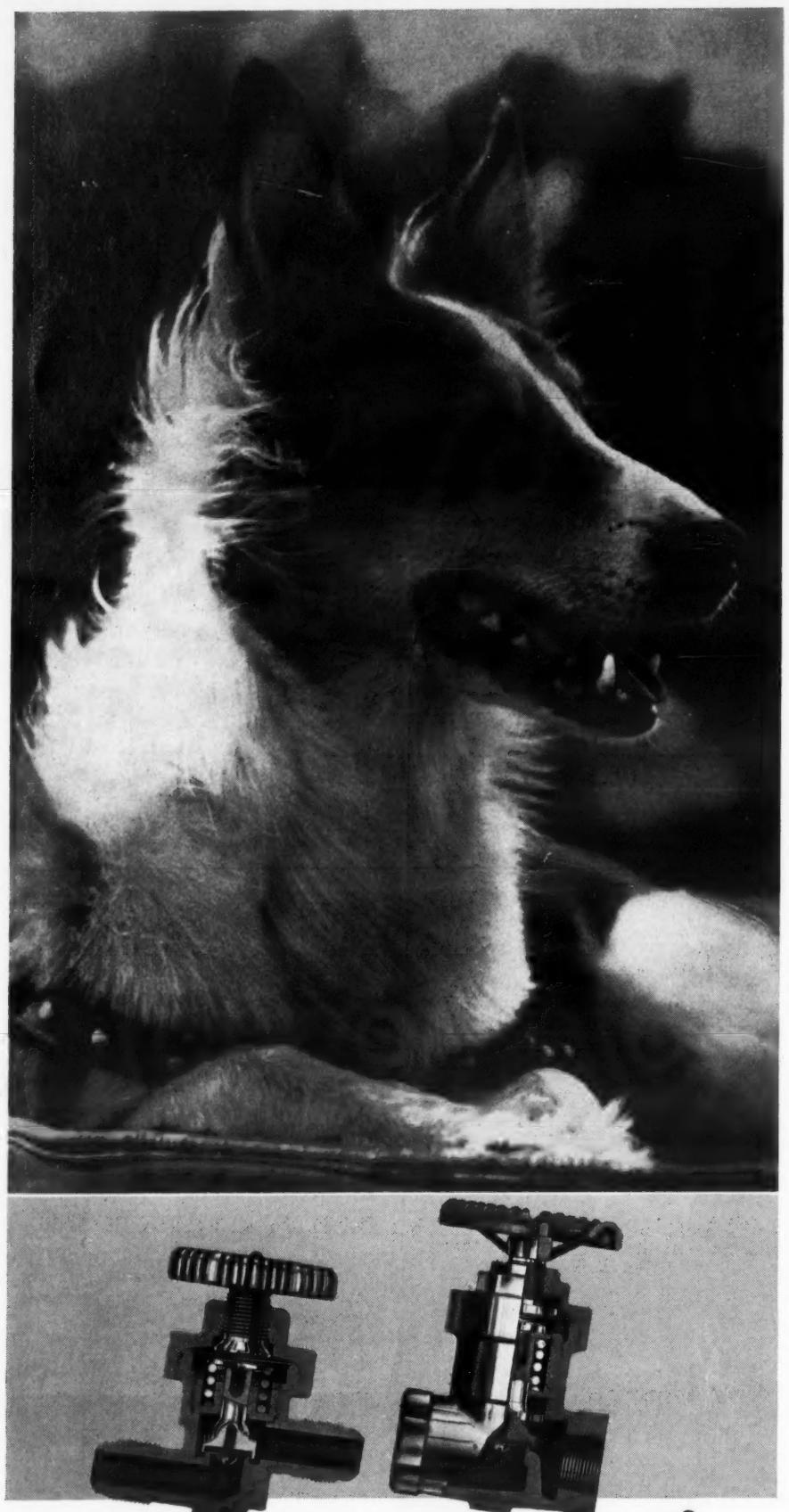
GALE PRODUCTS
GALESBURG, ILLINOIS, U. S. A.
Refrigeration Division:
Outboard, Marine and Manufacturing Co.

GALE Products
1635 Monmouth Blvd.
Galesburg, Illinois
Gentlemen:
I want to know *all* about the Gale for 1941. Rush full information.

NAME_____

ADDRESS_____

CITY_____ STATE_____



Faithful

TO EVERY AIR CONDITIONING and REFRIGERATION NEED

Low costs that keep profit up . . . long service . . . positive action . . . and customer acceptance . . . are the dependably faithful features inherent in every Kerotest Valve and Fitting.

When your parts costs are right and your units constantly perform efficiently . . . you're bound to improve sales and make better net profits.

That's why so many air conditioning and refrigeration equipment manufacturers have already standardized on *Kerotest*. That's why you should consider *Kerotest* Valves and Fittings for *all* of your requirements.

KEROTEST

KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

Rainbault To Head G-E Air Conditioning

BLOOMFIELD, N. J.—John P. Rainbault has been named manager of the air conditioning and commercial refrigeration department of the General Electric Co. effective immediately, it was announced last week by H. L. Andrews, vice president.

Formerly manager of the company's electric clock section in Bridgeport, Conn., Mr. Rainbault succeeds Stuart M. Crocker, who was recently named a G-E vice president concerned with customer relations. Mr. Rainbault's headquarters will be in Bloomfield.

A native of Kansas City, Mo., Mr. Rainbault is 52 years old. He was graduated from the University of Paris, France, in 1909 with an electrical engineering degree. He joined the General Electric Co. in 1930 as New York district manager of radio sales. He had previously served as radio sales manager for the Federal Telephone & Telegraph Co. in Buffalo. In 1931 he was transferred to electric clock sales activities and he had been manager of G-E clock sales since Jan. 1, 1932.

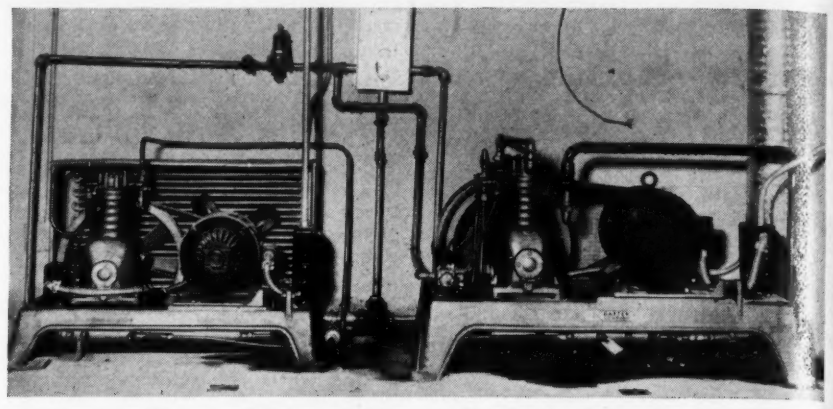
Mr. Andrews is in charge of both the G-E appliance and merchandise department in Bridgeport and the air conditioning and commercial refrigeration department also.

Two Small Unit Coolers Added to Fedders Line

BUFFALO—A new "baby" unit cooler, Fed-R-Luxe model 51, together with model 354, has been added to the Fedders Mfg. Co. larger size line of single and twin models for wall and ceiling installations. The smaller size units are designed for use in smaller and intermediate capacity display cases, reach-in cabinets, florist refrigerators, and other similar applications.

Cabinets of the new units are streamlined, and are finished in heat-treated white enamel. All features of the larger Fedders models are incorporated in the smaller units, including removable grille for convenience in oiling motor and adjusting valve, all-copper cooling element, adjustable drain trough, and quiet operation.

One's for Furs, the Other for Fur Coats



These two Mills condensing units provide refrigeration for the storage vaults of Master Furriers in Duluth. Baxter Co. made the installation.

Beverage Venders To Be on Display At Coin Machine Show

CHICAGO — Coin-operated beverage dispensing equipment will be prominently displayed during the 1941 Coin Machine Show, to be held Jan. 13 through 16 in the Hotel Sherman, same dates as the All-Industry Exhibition in the Stevens.

Refrigeration men attending the Stevens show may be interested in previewing the newest models in automatic venders, which dispense either bottled goods or drinks by the cup, mixed either beforehand or in the machine itself.

In past years, an "exchange" arrangement has been worked out whereby registrants at the All-Industry Exhibition are admitted to the Coin Machine Show upon presentation of their badges, with the same courtesy applying to Coin Machine Show registrants. It is likely that such an arrangement also will be effected this year.

Gansman Transferred

PHILADELPHIA—H. M. Gansman, a vice president of the Westinghouse Electric Supply Co. in New York City, will transfer his headquarters to Philadelphia and will take over management of the company's middle Atlantic district here. Management of the company's radio receiver business will also be transferred to Philadelphia.

Coats Held at 42-48° F. Raw Furs at 20-25° F.

DULUTH, Minn.—Two Mills condensing units installed by Baxter Co. provide the refrigeration which enables Master Furriers to hold both its fur coats and its raw furs at proper temperatures.

A 5-hp. "Freon" water-cooled unit carries the load for the 46½ x 22 x 23-foot fur storage room; a 3-hp. "Freon" air-cooled unit handles the 9½ x 19½ x 7¾-foot raw fur storage room.

The larger room has a capacity for over 6,000 fur coats. This room is held at a temperature of 42° to 48° F. Two inches of corkboard insulate the ceiling. Walls and floor are of solid concrete 13 inches thick. The 5-hp. unit which cools this room is figured to have a capacity of approximately 56,000 B.t.u. per hour at 18° F. refrigeration temperature and 45° condensing medium temperature.

Walls, floor, and ceiling of the raw fur storage room are insulated with 5 inches of corkboard. The 3-hp. unit carries this room at a temperature between 20° and 25° F. with the room three-quarters full of raw furs.

Warren Refrigeration Used in Army Camps

ATLANTA—Several hundred Warren commercial refrigerators have been purchased by the government for use in military camps, officials of the Warren Co. report.

Training centers in which Warren equipment is in use include: Camp Blanding, Florida; Fort Benning, Georgia; Fort McClellan, Alabama; Fort McPherson, Georgia; MacDill Aviation Field, Florida; Fort Bragg, North Carolina; Meridian Municipal Airport, Mississippi; Nansemond Ordnance Depot, Virginia; and Elgin Field, Florida.

Stickney Elected Head Of Chicago ASRE

CHICAGO — A. B. Stickney was elected chairman of the Chicago section of American Society of Refrigerating Engineers at the December dinner meeting of the organization in the Drake hotel. H. F. McPherson and H. A. Phillips were named vice chairmen for the coming year, and B. E. Seamon was reelected secretary and treasurer.

The section's retiring chairman, J. E. Peterman, was presented with a gold-engraved section key in recognition of his services to the organization during the past year.

TEMPRITE
COOLING UNITS
Instantaneous and Storage
for
Water, Beer and Other Liquids

You Are Cordially Invited To Inspect
The Temprite Display at
★ BOOTH 116 ★
Third All-Industry Refrigeration and Air Conditioning Exhibition — January 13 to 16, 1941 — Stevens Hotel, Chicago, Ill.

Water Cooling
Water Coolers (Instantaneous and Storage Types) • Wall and Pedestal Fountains • Bottling Plant Water Cooling System • Soda Fountain Water Coolers

Beer Cooling
Package Type • Remote Type • Instantaneous Type • Storage Type

Miscellaneous Cooling
Bakery Water Cooling Units • Acid Cooling Units • Oil Cooling Units • Photo Developing Water Cooling Units • Refrigerant Transfer Systems • Wine Coolers

Accessories
"Oilrite" Oil Separators • Adaptor Blocks • Equalizer Tanks

Valves
Suction Pressure Control Valves • Two Temperature Valves • Hi Side Float Valves • Water Regulating Valves • Beer Line Temperature Valves

Faucets
Refrigerated Beer Faucets

Write for descriptive literature
TEMPRITE PRODUCTS CORPORATION
Originators of Instantaneous — *Liquid Cooling Devices*
55 PIQUETTE AVE. — DETROIT, MICHIGAN

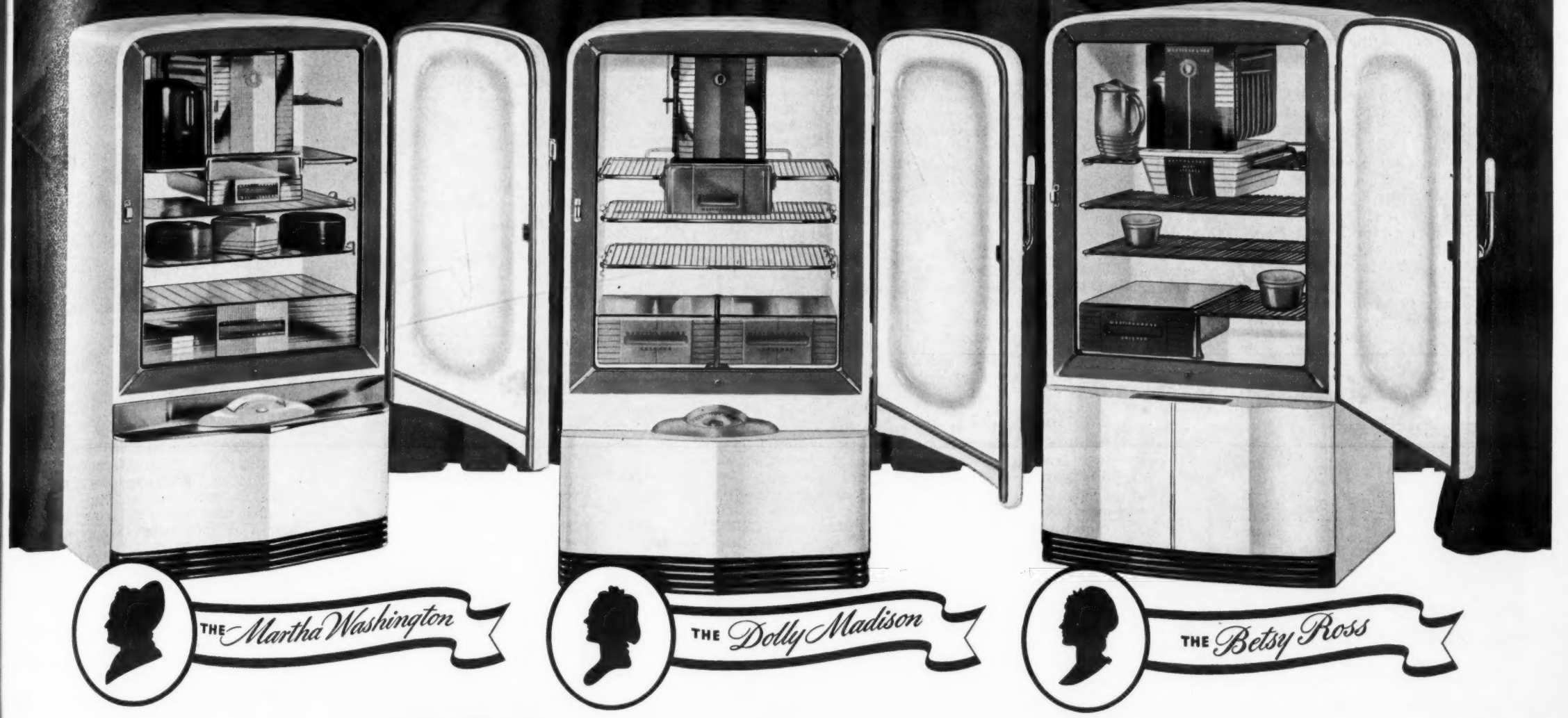
WROUGHT COPPER STREAMLINE SOLDER FITTINGS

These fittings are manufactured to very close capillary tolerance. The solder cups are of ample length and soldering surface, well within the strength limits for soldered areas as determined by the National Bureau of Standards. Extra strength is provided where it is most needed. Copper tees and elbows are fitted with heavy paper board caps, which provides cleanliness and protection.

Our complete line is on display at booths Nos. 120 and 121 at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

★ FOR BETTER LIVING IN THE AMERICAN WAY ★



THE NEW 1941 Westinghouse REFRIGERATORS *are ready!...with*

It's the "DREAM LINE" of 1941—this glamorous new group of COLOR-STYLED Westinghouse Refrigerators! From top to bottom, in every price bracket, there's a model to suit *every* prospect's individual taste.

This new line includes four super-value SIXES . . . two beautiful SEVENS (competitive with most "sixes" displayed by others) . . . and three eye-filling NINE cubic foot models. Popular sizes are available in all-porcelain as well as bonderized Dulux, and there are special models, large and small, to fit every family need.

New Westinghouse models are powered with the famous sealed-in-steel ECONOMIZER mechanism, now quieter and more efficient than ever. Cabinets, frosters and fittings reflect the greatest design achievements in Westinghouse Refrigerator history. And increased production capacity assures an ample supply in 1941 of all popular Westinghouse models.

NEW COLOR-STYLING! SELLING FEATURES!

NEW INCREASED CAPACITY! "STEP-UP" PRICING!

NEW OPPORTUNITIES FOR SALES AND PROFIT!

SEE YOUR LOCAL SHOWING OF THE COMPLETE LINE

Ask your distributor for the time and place of your complete local Westinghouse showing. See it—get all the facts.

SELL THE DIFFERENT REFRIGERATOR WITH *EXCLUSIVE* TRUE-TEMP CONTROL!

Only Westinghouse has TRUE-TEMP CONTROL—a PLUS value that gives users SUPER MARKET Food Protection. It is a basic feature of great importance. A giant advertising and promotional campaign will put this advantage to work for YOU in the public mind. Don't miss out on the extra profits it brings. Call your distributor or write direct for complete details.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
DEPARTMENT 1018 MANSFIELD, OHIO

STEP IT UP *with* Westinghouse *in '41*

Manufacturers Take 200 Exhibit Spaces To Display '41 Products At Greatest of All-Industry Shows

(Concluded from Page 1, Column 5)

of arrival if at all possible) to the registration clerks at the registration desk where he will be given his badge for admission. This badge will be honored by the guards at the entrance of each of the two exhibition halls throughout the period of the Show.

Many new lines of equipment are expected to make their bow at the Exhibition, and a wider variety of products than has hitherto been shown will be on display. This is particularly true of complete unit, and air conditioning equipment.

A number of manufacturers are planning displays that will have unusual "attention getting" value, and which will feature special exhibit stunts.

Attendance will be limited, insofar as is possible, to bona fide members of the refrigeration and air conditioning industry. To speed up registration and to avoid congestion at the registration booth as much as possible, advance registration cards have been sent out to be filled out in advance. (Readers can still obtain these by writing to the NEWS, if they wish.)

The Third All-Industry Banquet will begin at 6:30 p.m. Tuesday night, Jan. 14. Reservations may be made at $3 per plate. This will include the fast-moving floor show arranged by M. W. "Mel" Knight, general sales manager, Peerless of America, Inc., and chairman of the Exhibition Committee, and dancing after the floor show.

Last year's floor show was termed by many the best show of its kind ever seen, with the performers receiving a tremendous round of applause at its conclusion. Chairman Knight promises a bigger and better attraction this year.

During the Show week the Refrigeration Service Engineers Society, the National Air Conditioning Association, and the National Refrigeration Supply Jobbers Association will hold their annual conventions. The American Society of Refrigerating Engineers has completed its program for a special one-day meeting early in the Show week.

It has been suggested that the most convenient arrangement for guests to get a quick and general preview of the All-Industry Show will be to ascend the short flight of stairs immediately opposite the registration counter to the entrance to the mezzanine floor exhibition hall.

Passing through this hall he then will take the mezzanine floor elevators directly to the landing of the upper lower floor, from which he will enter the lower floor exhibition hall through the same entrance used at previous shows. The most convenient route from the lower hall to the one on the mezzanine floor will be to reverse this route by taking the elevators at the lower floor landing to the mezzanine floor, from where they will merely walk across the elevator landing to the entrance of the mezzanine floor section of the Show.

Uniformed usherettes will be stationed at all entrances and along the routes to and from the two halls to guide the visitors, and, incidentally, to caution those not having badges to procure one before going to either of the exhibition floors. There will be no arrangements whatever for the making up or giving out of badges on either of the exhibition hall floors.

The committee in charge of the registration also calls attention to another regulation this year under which each guest is requested, when making out his registration card, to check only one of his business classifications, where he is engaged in more than one type of business. In checking his classification, each guest is specifically requested to check the one which represents the principal activity of his company.

The committee that has been in charge of arrangements for the Show includes:

M. W. Knight, Peerless of America, Inc. (chairman).

C. H. Benson, Imperial Brass Mfg. Co.

R. H. Luscombe, Penn Electric Switch Co.

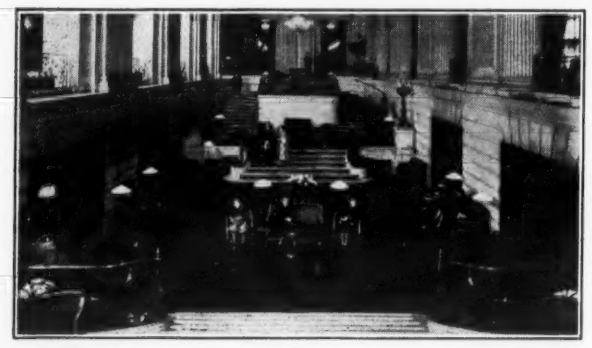
K. B. Thorndike, Detroit Lubricator Co.

D. H. Daskal, Perfection Refrigeration Parts Co.

Barrett Scudder, Jas. P. Marsh Co.

R. M. McClure, executive secretary, R.E.M.A., and manager of the All-Industry Exhibition.

Scene of Registration Headquarters



With the All-Industry Exhibition occupying two exhibition halls this year, registration headquarters are in a new place. The official registration headquarters—for everyone attending the show—will be located on the main lobby floor, immediately inside the Michigan Ave. entrance of the hotel.

Girl Guides To Direct Traffic At Show

This "major usherette" will head a team of attractively costumed usherettes that will direct traffic to the exhibition halls which will house the booths of the Third All-Industry Refrigeration & Air Conditioning Exhibition. So look for these girls if you have any trouble finding your way around — the Exhibition.

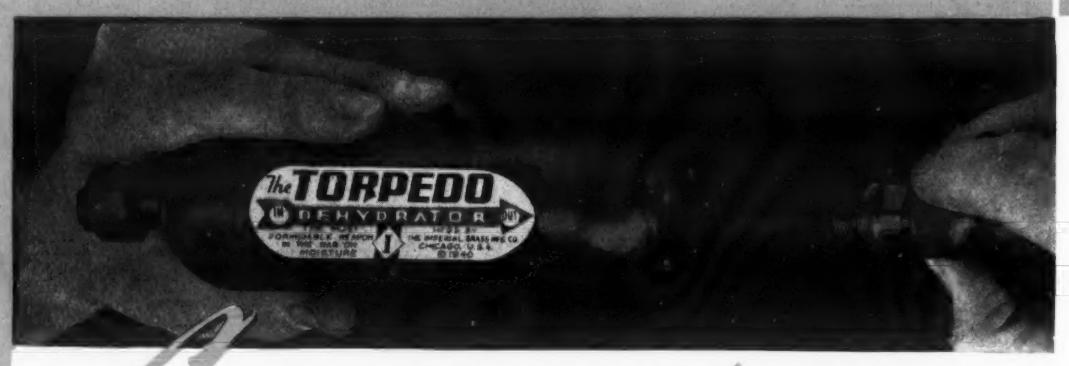
Gilfillan Now Operating In Temporary Quarters

LOS ANGELES—Gilfillan Bros., refrigerator manufacturer whose plant was destroyed by fire a few weeks ago, has set up temporary office and manufacturing headquarters at 1609 South Western Ave.

The company, which had an independent warehouse stock of cabinets and refrigeration units in Los Angles, put these into assembly.

Plans are being made to build a modern plant on the site of the plant which burned down, says Mr. Heiser.

IMPERIAL NEWS for 1941



Announcing the New TORPEDO (Patent applied for) DEHYDRATORS

—the most formidable weapon in the war on moisture

One piece streamlined shell

Copper and brass construction

Fewer joints—no soft solder—less chance of leakage

Packed with "Silica Gel"

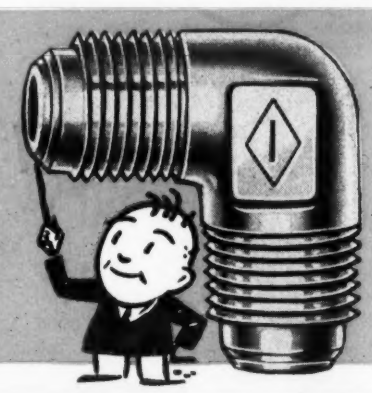
Sizes up to 7 H.P.

ALSO "TORPEDO" FILTERS AND ACCUMULATORS

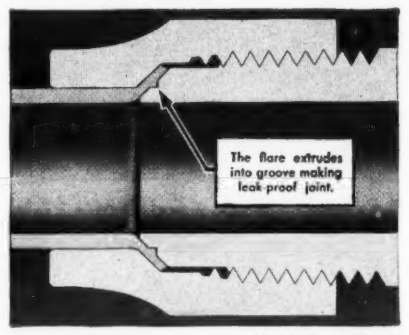
THE IMPERIAL BRASS MFG. CO.
565 S. Racine Ave., Chicago, Illinois

See next page for news about other IMPERIAL PRODUCTS

IMPERIAL "Triple Seal" will continue to be the big news in fittings for 1941



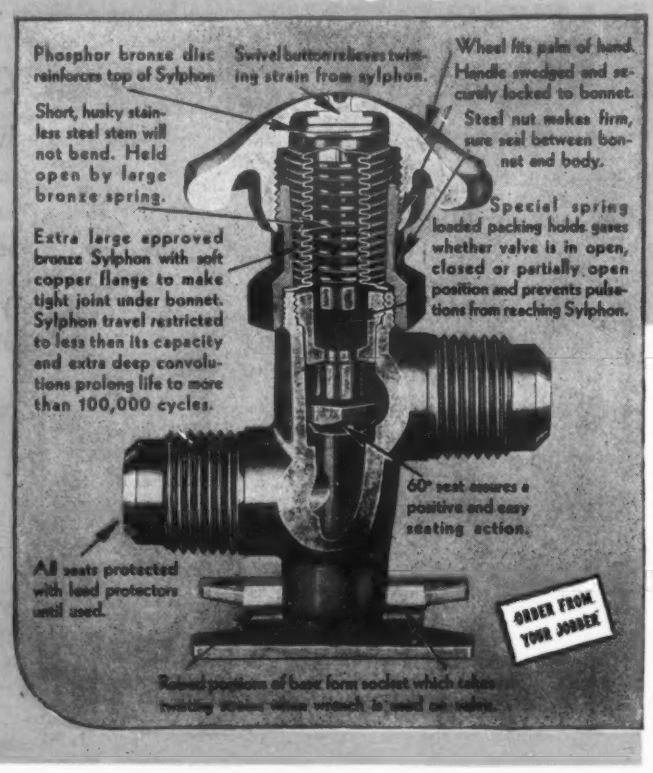
● There is no question but what Triple-Seal Flare Fittings will continue to be the big fitting news of 1941 for these fittings have greatly simplified the job of making connections that stay tight. You will be surprised how easily they pull up to a tight leakproof joint—how they can be connected time after time and still hold under high pressures without leaking. Tests have proven that it is possible to make up tight joints from fittings where the seats have been nicked or marred. When Triple-Seal fittings are used there is usually no need to reface the fittings.



PATENT PENDING

All flared ends on Imperial fittings, refrigeration valves, strainers, floats, controls, etc., are now made with Triple-Seal connections. Be sure to ask for them when you order from your jobber.

Double Security will still mean SYLPAK in 1941


Phosphor bronze disc reinforces top of Sylphon
Swivel button relieves twisting strain from sylphon.
Wheel fits palm of hand. Handle swedged and securely locked to bonnet.
Short, husky stainless steel stem will not bend. Held open by large bronze spring.
Steel nut makes firm, sure seal between bonnet and body.
Special spring loaded packing holds gases whether valve is in open, closed or partially open position and prevents pulsations from reaching Sylphon.
Extra large approved bronze Sylphon with soft copper flange to make tight joint under bonnet. Sylphon travel restricted to less than its capacity and extra deep convolutions prolong life to more than 100,000 cycles.
60° seat assures a positive and easy seating action.
All seats protected with lead protectors until used.
ORDER FROM YOUR JOBBER
Raised portions of base form socket which takes hexiting screw when wrench is used on valve.

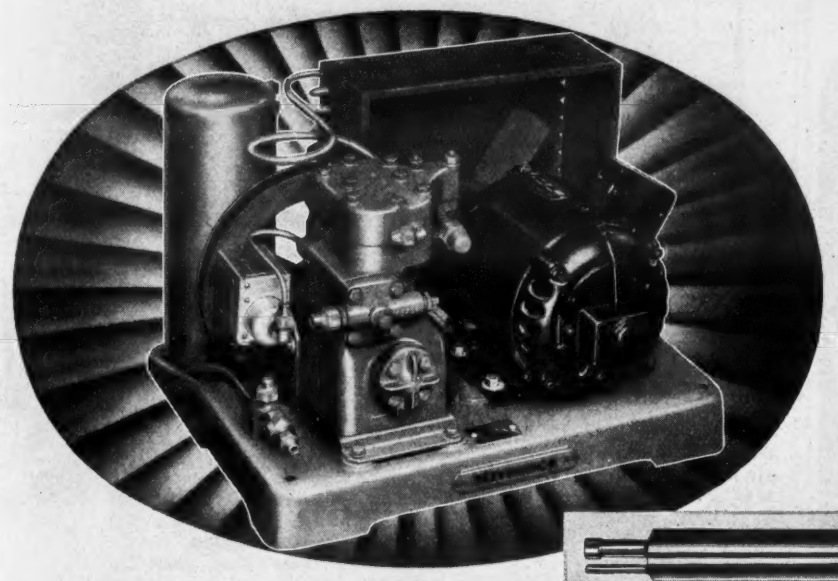
● Despite their special advantages and premium quality, Imperial Sylpak Valves cost no more than ordinary packless valves. It is no wonder, therefore, that service men in constantly growing numbers are specifying these better designed and better made valves by name when ordering.

These valves are available for tube diameters from ¼" to ¾" for S.A.E. or solder fittings as desired. Sylphon type valves can also be furnished in sizes up to 1½" female I.P.T. and 1⅝" O.D. tube size.

For Commercial Equipment or Refrigeration Parts

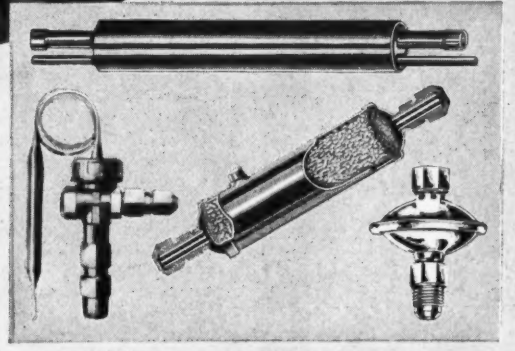
Get More —

Get KELVINATOR



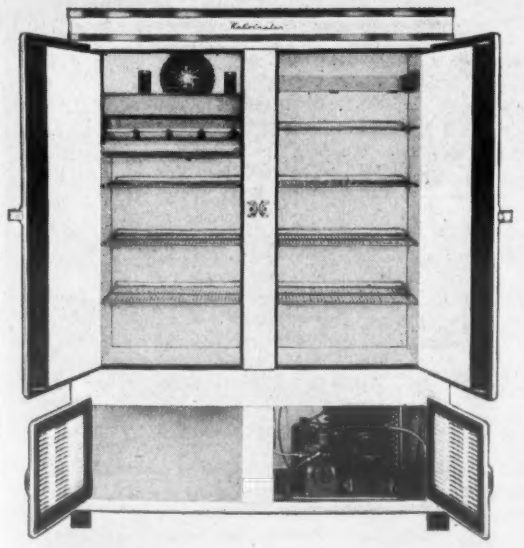
KELVINATOR CONDENSING UNITS

Precision-built by Kelvinator and designed to give quieter performance, more economical service and long life. Available in a wide range of air and water cooled models in various sizes to suit all types of installations.



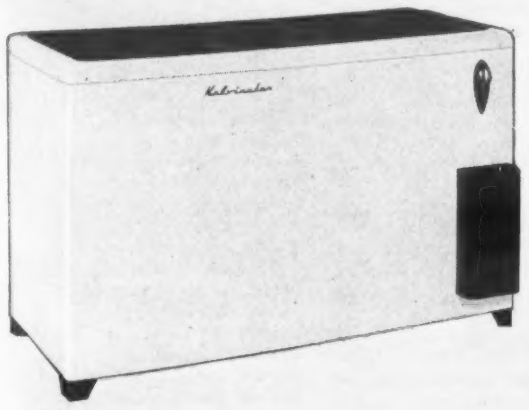
REFRIGERATION PARTS AND SUPPLIES

Kelvinator offers a complete line of refrigeration parts and supplies that you can sell with confidence. Available at strategically located warehouses for prompt delivery.



REACH-IN REFRIGERATORS

Two models in the most wanted sizes—model R-20 with 19.83 cu. ft. capacity and 27.6 sq. ft. shelf area, and model R-30 with 30.4 cu. ft. capacity and 38.5 sq. ft. shelf area. Forced air cooling. Ice Makers available on both models. Self-contained, including condensing unit—ready to run.



BOTTLED BEVERAGE COOLERS

Tightly and permanently sealed against moisture, rusting and air leakage. Cool, wet or dry. Model BC266 holds 266 seven ounce bottles. Model BC154, available in green or white, holds 154 seven ounce bottles. Self-contained, including condensing unit.

FROSTED FOOD CABINETS

4, 6, 8 and 12 Hole Models, scientifically designed for efficient storage of frosted foods. Flip-flop lids with rubber hinges. Condensing unit on slide-out base.

Complete Line of Condensing Units and Packaged Equipment that Gives You MORE in Performance...MORE in Selling Features ...MORE in Opportunities to Make Money in the Greatest Selling Market in Years.

Today business is expanding to the tune of millions of dollars. Markets, restaurants and other stores requiring refrigeration are preparing to cater to expanding communities and thousands of spenders created by defense industries. The demand in 1941 for commercial refrigeration equipment and refrigeration parts and supplies is going to be the greatest in years.

And Kelvinator is ready to help you to cash in! Ready with the finest commercial equipment it has ever offered . . . ready with a SIMPLIFIED line designed with your investment and selling problems in mind . . . ready with values that will enable you to go right out and sell against any competition that the field can offer!

The Kelvinator Commercial Line includes a complete range of condensing units, famous throughout the industry for unexcelled efficiency and operating economy. Both air and water cooled types are available, in sizes to provide for every replacement and special installation job.

In addition there is a line of "packaged" items—reach-in refrigerators, beverage coolers, and frosted food cabinets—that are easy to sell and easy to install. Because "fringe" models that have little demand have been eliminated, values are greater.

Kelvinator's Commercial Line is entirely KELVINATOR-BUILT—designed, tested, and precision-manufactured by Kelvinator, with its long record of experience in commercial refrigeration.

Kelvinator helps you go after the profitable service business with a complete line of parts and supplies which you can recommend and install with full confidence.

The name KELVINATOR is your best selling argument in getting commercial refrigeration and refrigeration parts and supply business—an argument more powerful today than in all the years of Kelvinator history.

Get all the details of the increased selling opportunities that Kelvinator offers—write, or mail the coupon!

★ ★ ★

See our display at the

ALL-INDUSTRY SHOW

Booths 145 - 146 - 147

★ ★ ★

Mail the Coupon to

KELVINATOR COMMERCIAL, PARTS AND SERVICE DIVISION
Nash-Kelvinator Corp. • Detroit, Mich.

Kelvinator Commercial, Parts and Service Division,
Nash-Kelvinator Corporation, Detroit, Michigan

Gentlemen: I want to know more about ☐ the new Kelvinator Commercial Line. ☐ Kelvinator Refrigeration Parts and Supplies.

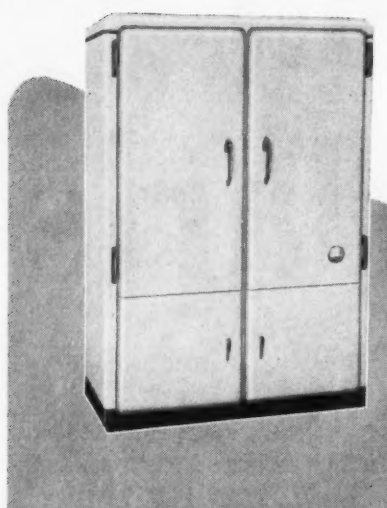
*Name*_____

*Firm Name*_____

*Address*_____

*City*_____ *State*_____

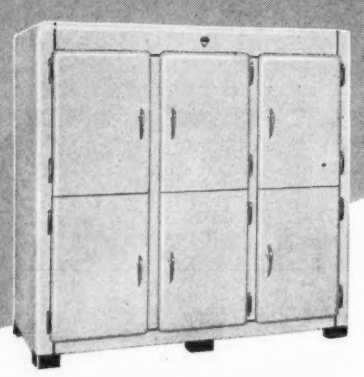
Dept. K-101



12 TO 71 CU. FT.

MOST COMPLETE
'REACH-IN' LINE
ON THE MARKET!

Here's the widest selection of sizes and styles the industry affords—a model for every need. Distinguished by superb styling, fine construction and outstanding value.



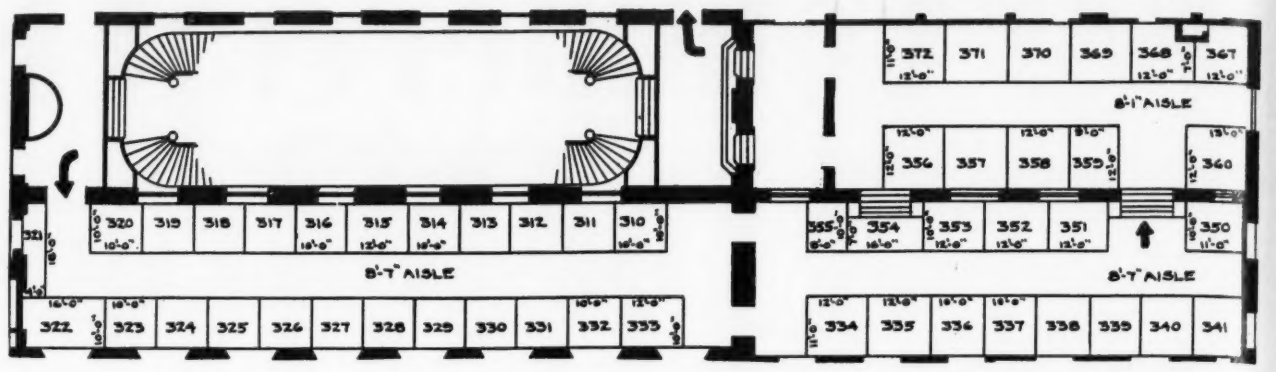
Model 120 (above) has 12 cu. ft. capacity—the newest member of the "Midwest 'Reach-in'" family.

Model 700 (right) another new model has 71.5 cu. ft. capacity. In between is a full range of sizes and equipment. Write for full details now.

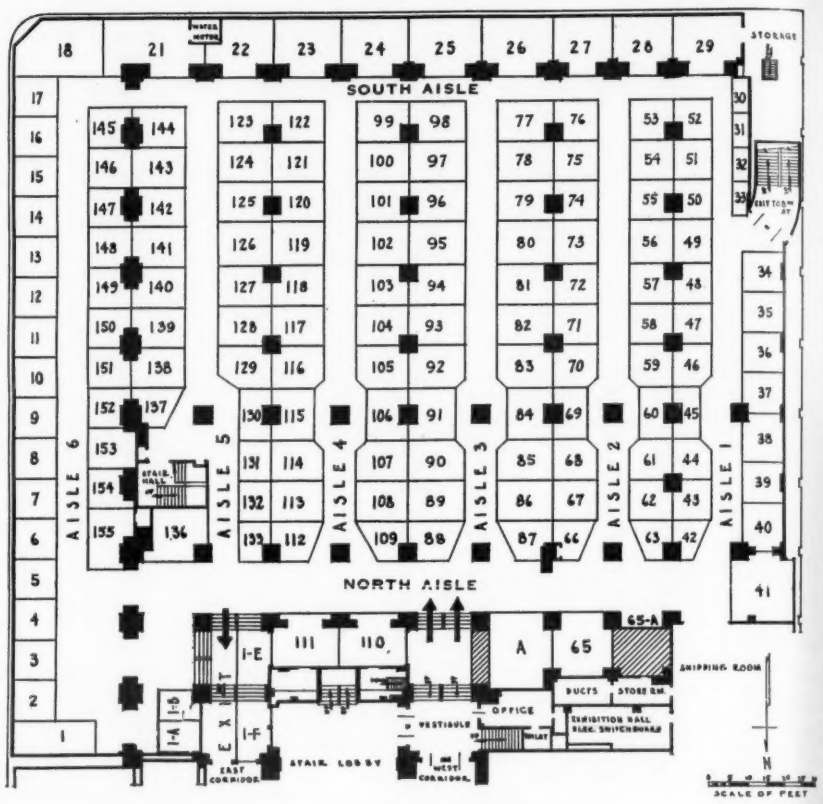
★ ★

Midwest MFG. COMPANY
Galesburg, Ill., U.S.A.
Export Division, Merchandise Mart, Chicago

Mezzanine Exhibition Hall Booth Arrangement



Lower Level Exhibit Layout



This year's All-Industry Refrigeration and Air Conditioning Exhibition will occupy two exhibit halls in the Stevens hotel—the main hall in the lower level and the mezzanine and Boulevard Room above the main lobby floor. Booth layout of the main exhibit hall is shown at right, mezzanine display arrangement above. Elevator service is available direct from one exhibit center to the other, without necessity of passing through the hotel lobby. All Show visitors must register, however, at the headquarters booth in the main-floor lobby (Michigan Ave. side).

There Is No Substitute For Experience

BIGGER BUSINESS IN 1941 . . .

WHAT does this New Year hold in store for you?

Are you prepared to sell commercial refrigeration products that bear the stamp of proven performance and public acceptance?

In the year just closed, Servel enjoyed the greatest volume and the most widespread distribution in its 20 years of manufacturing leadership.

Even greater potentialities lie ahead in 1941 for those who are in a position to take advantage of Servel's outstanding products and Servel's equitable policies.

The Servel Silver Fleet refrigerating units—which have earned such universal respect during the past two years—have been still further refined and improved for 1941. New models in popular sizes—both air-cooled and water-cooled—have been added to the line.

Servel's policy of controlled distribution which protects the interests of both manufacturer and distributor—will be rigidly maintained to insure a fair profit to all classes of customers.

* * *

Don't miss the Servel exhibit—Booth No. 136—at the All-Industry Exposition in Chicago.

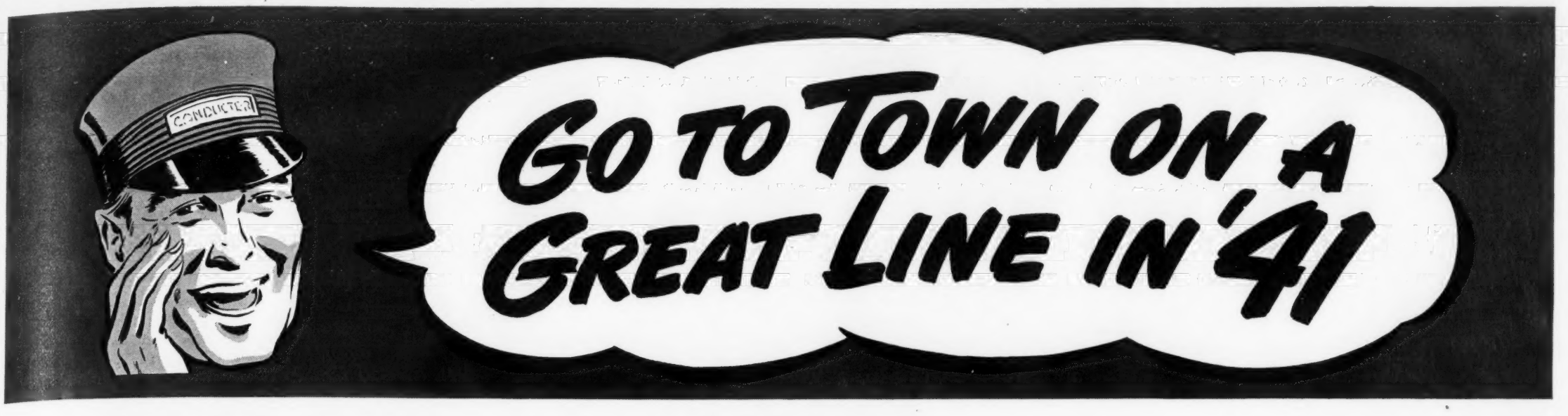
If you cannot attend the exposition, a note on your letterhead will bring Servel's new catalog. Write today to Servel, Inc., Electric Refrigeration & Air Conditioning Division, Evansville, Indiana.

OVER 80 STANDARD MODELS—
AIR-COOLED AND WATER-COOLED
⅕ H.P. TO 20 H.P.

SERVEL
COMMERCIAL REFRIGERATION
and
AIR CONDITIONING

Key To Exhibitors
At This Year's All-Industry Show

Acme Industries 41
Air-Maze Corp. 122
Alco Valve Co., Inc. 113-114
Allen-Bradley Co. 149-150
All-Steel-Equip Co., Inc. 112
Harry Alter Co. 355
Aluminum Co. of America 326-327
Aluminum Industries, Inc. 152
American Brass Co. 56
American Hard Rubber Co. 38
American Injector Co. 133
American Society of Refrigerating Engineers 358-359
Anemostat Corp. of America 333
Ansul Chemical Co. 77-78
Arcade Mfg. Co. 1-B
Automatic Products Co. 128-129
Bastian-Blessing Co. 353
Betz Corp. 60
Black-Sivalls & Bryson, Inc. 148
Bonney Forge & Tool Works 89-90
Brunner Mfg. Co. 339-340
Bush Mfg. Co. 14-15
Business News Publishing Co. 110-111
Carrier Corp. 34-35-36
Certified Products Co. 328-329
Chase Brass & Copper Co. 97
Chicago-Wilcox Mfg. Co. 115
Chill-Quick Corp. 315
B. H. Clark Co. 332
Convention Binder Service 360
Copeland Refrigeration Corp. 87-88
Curtis Refrigerating Machine Co. 7-8
Cutler-Hammer, Inc. 107-108
Davison Chemical Corp. 47-48
Day & Night Mfg. Co. 84
Dayton Rubber Mfg. Co. 4-5
Deepfreeze Div., Motor Products Corp. 27
Deissler Machine Co. 334
Detroit Lubricator Co. 62-63
Dole Refrigerating Co. 81-82-83
Domestic Engineering Co. 323-324
Dry-Zero Corp. 22
E. I. du Pont de Nemours & Co., Inc. 24
Durabilt Steel Locker Co. 49
Electrimatic Corp. 123
Emery Thompson Machinery & Supply 367-368-369
Fairbanks, Morse & Co. 11-12-13
Fedders Mfg. Co. 92-93
Gale Products 106
Gates Rubber Co. 23
General Electric Co., Motor Div. 57-58-59
General Electric Co., Air Conditioning & Commercial Refrigeration Div. 117-118
General Refrigeration Div., Yates American Machine Co. 310-311
Geneva Mfg. Co. 321
L. H. Gilmer Co. 109
Grand Rapids Brass Co. 312
W. A. Hammond Drierite Co. 3
Heating & Ventilating 99
Heating, Piping & Air Conditioning 374
Henry Valve Co. 71-72
Howe Ice Machine Co. 151
Ideal Beer Cooler Co. 98
Imperial Brass Mfg. Co. 66-67-68
Jarrow Products 1-A
Justrite Mfg. Co. 334
Kason Hardware Corp. 37
Kelvinator Div., Nash-Kelvinator Corp. 145-146-147
Kerotest Mfg. Co. 75-76
Kurly Kate Corp. 333
C. P. Leaf 331
Liquid Carbonic Corp. 65
Linde Air Products Co., Unit of Union Carbide & Carbon Corp. 60
Libby-Owens-Ford Glass Co. 335
Marlo Coil Co. 154-155
Jas. P. Marsh Corp. 73
Master Refrigerated Locker Systems, Inc. 44
McCord Radiator & Mfg. Co. 54-55
McIntire Connector Co. 76
Mills Novelty Co. 39-40
Minneapolis-Honeywell Regulator Co. 137-138
Modern Equipment Corp. 139-140-141
Mueller Brass Co. 120-121
National Refrigeration Supply Jobbers Association 353
Nevinger Mfg. Co. 334
Nickerson & Collins ..... A
Northern Indiana Brass Co. 135
Pacific Lumber Co. 43
Peerless of America, Inc. 102-3-4-5
Penn Electric Switch Co. 100-101
Perfection Refrigeration Parts Co. 77
Portable Elevator Mfg. Co. 95
Quick Frozen Foods 29
Ranco, Inc. 142-143
Refrigeration Appliances, Inc. 25-26
Refrigeration Service Engineers Society 360
Reol Refrigeration Co. 63-A
Rotary Seal Co. 153
Russell Electric Co. 130
Servel, Inc. 126
Spoehrer-Lange Co. 110
Square D Co. 94-95
Standard Refrigeration Co. 69
Stangard-Dickerson Corp. 122
Superior Valve & Pittings Co. 124
Swift Mfg. Co. 79
Taylor Freezer Corp. 316-317
Tecumseh Products Co. 85-86
Temprite Products Corp. 118
Texas Co. 350
Tuthill Pump Co. 9-10
Tyler Fixture Corp. 61
United Frigurator Engineers 4
United Refrigerator Mfg. Co. 352
Universal Cooler Corp. 42-43
Universal Zonalite Insulation Co. 66
Utilities Engineering Institute 127
Victor Mfg. & Gasket Co. 96
Virginia Smelting Co. 128
J. H. H. Voss Co. 30-31-32-33
Wagner Electric Co. 70
Waukesha Motor Co. 372
Weatherhead Co. 336-337-338
Westinghouse Electric & Mfg. Co. 51-52
White-Rodgers Electric Co. 16-17
Williams Oil-O-Matic Heating Corp. ..... 21 & 166
Wolverine Tube Co. 64



HOTPOINT ANNOUNCES...

New Products! New Values! New Features! Backed by the strongest merchandising program in our history!

LEADER IN REAL QUALITY!

DORIC DE LUXE — the big new Hotpoint 7 cubic foot, full-family size refrigerator boasts all the great Hotpoint convenience features *plus* distinguished styling and beauty. Features New Butter Conditioner, Giant Bottle Zone, Hi-Humidity Compartment, Extra Bin for Dry Storage.

Hotpoint Refrigerator Prices Start at $112.95

NEW CENTURY RANGE

3 new improved Hi-Speed Calrod Surface Units, each with 5 Measured Heats • New Radiant Broiler Unit • New Indicating Switch Buttons • Oven Signal Light • 5-Heat Thrift Cooker with Flavor-Seal Lid • Oversized All-Purpose Flavor-Seal Oven • New Calrod Baking Unit with new Heat Deflector • All-Porcelain enamel inside and out • Automatic Oven Temperature Control • One Large Sliding Storage Drawer • Double Size Tilt-Out Bin.

$99.95 F. O. B. Factory Chicago
INSTALLATION EXTRA

Be sure to see the new Hotpoint Automatic Electric Dishwasher and the Eye-Catching Line of Home Laundry Equipment!

READY and waiting to go! Hotpoint's dynamic new advertising and sales plans for '41 are all lined up—ready to give you your greatest year of sales—ready to go to town for you with the greatest array of new product values and features ever shown in Refrigerators, Ranges, Water Heaters, Washers and Ironers, Automatic Dishwashers and Electrasink!

You won't want to miss this array of new appliances and selling help. Get aboard now—see the greatest Hotpoint line in years at Distributor Previews during January. Also at Major Appliance Show, American Furniture Mart, January 6-18 — Space 528. Edison General Electric Appliance Co., Inc., 5632 West Taylor Street, Chicago, Illinois.

Hotpoint

ELECTRIC RANGES
REFRIGERATORS · WATER HEATERS
WASHERS AND IRONERS
CLOTHES DRYERS
AUTOMATIC DISHWASHERS
ELECTRASINK

Druckenmiller Gets His Advertising Out of the Way He Does a Job

Installation Tricks, Special Trucks Impress Prospects

PHILADELPHIA—Do the job a little bit better, and then let your prospects know that you do the job "a little bit better," is the plan for commercial refrigeration sales and service success conceived by Charles Druckenmiller, who operates the Druckenmiller Sales & Service Co., Servel dealer here.

As an example of doing the job "a little bit better," note some of the details in the installation shown in the picture on the opposite page.

Note how the compressor is mounted—on a wooden frame. This Mr. Druckenmiller has specially built for him, each compressor model having its own particular frame. Legs on the compressor base rest on a ⅜-inch recessed ledge.

These bases keep the compressor well off the floor level, and reduce vibration because of the snug fit. They also make possible quick and easy installations.

Another detail of the installation to which Mr. Druckenmiller devotes some care is the panel board on which are mounted the manifolds, controls, etc. He usually installs his own, rather than attempting to take advantage of some of the existing wall space. He also uses it to start a neat-appearing running of the suction lines. While the installation shows a plywood panelboard, Mr. Druckenmiller generally uses regular ½-inch board, as small as possible.

Mr. Druckenmiller's trucks in which he carries materials and supplies offer further evidence to customers and prospects that he goes about his work in a thoughtful, efficient manner.

He has two trucks, both especially made, and both designed to have at all times the materials and tools needed for the job.

Shown in the photograph is his installation truck, most spectacular part of which is the hoisting crane for handling compressor deliveries.

Note how the sides are sectioned off into compartments, which hold tubing, fittings, refrigerants, expansion valves, and all or any parts needed to put in an installation of any size. There is never any need of "going back to the shop" for necessary parts.

These sections in the truck are made of sheet metal, have shelves of various sizes inside, and are so locked that only a special key will open them up.

A Truck Designed For Installation Work

This is Charles Druckenmiller's truck which he uses when he goes out on installations of commercial refrigeration equipment. The crane saves back-breaking work. In the panel sides are compartments which hold parts and tools, and can be opened only with a special spanner. This and a special service truck were designed by Mr. Druckenmiller.

The service truck is somewhat different in appearance, being roofed over so that it looks like a small tool shed, whereas the installation truck is more like a fire truck—with an open space in the middle. A tremendous amount of material can be carried in the service truck.

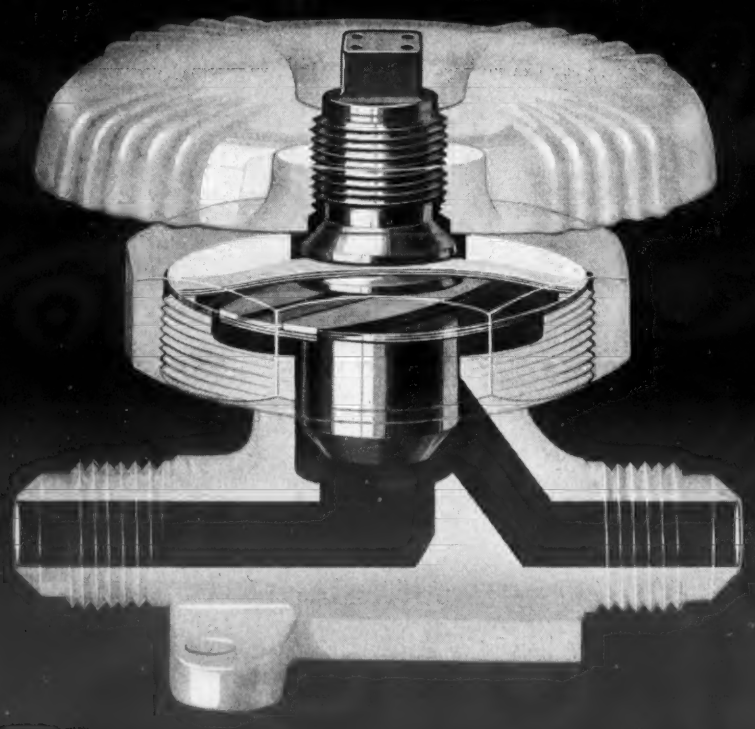
"When you can get prospects to come to you and say, 'I want a job just like the one you put in Charley's market,' you know you've done a good job—the kind that's going to bring more sales," says Mr. Druckenmiller.

But Mr. Druckenmiller is not going to depend on word of mouth advertising alone. An amateur photographer who does his own developing and enlarging, he has started to take "before and after" pictures of jobs in which he has replaced old equipment, and his pictures will tell a pretty convincing story. He is now trying to get the right kind of an album in which to put these pictures.

Another stunt which might impress prospects who come to his quarters is the large map on which colored pins indicate the installations he has made in the Philadelphia area.

WEATHER

"Simplicity" Packless Valves



★ **Simplicity** . . . few parts—absolutely nothing to get out of order.

★ **Beryllium copper diaphragm** . . . fracture proof and leak proof. Has been tested through 100,000 "on and off" cycles without fracture.

★ **Inlet and outlet connections on same level** . . . simplifies installation.

★ **Full capacity openings** . . . complete refrigerant flow through valve with less than half a full turn.

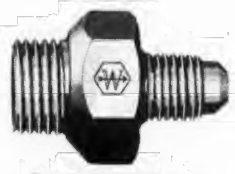
★ **Low overall height** . . . requires less installation space. The lowest height of any valve on the market.

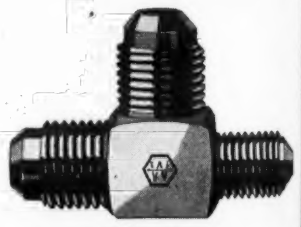
★ **Natural grip oval handwheel** . . . valve is easy to operate.

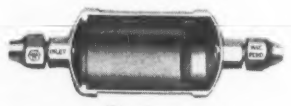
★ **3 Styles** . . . Two way—three way—angle.

For Exacting Service STANDARDIZE

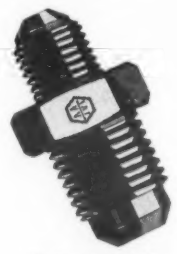
Flare nut


Strainer connector

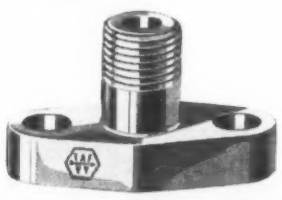

Reducer tee


Strainer

By-pass valve


Reducing union

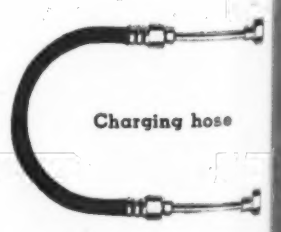
Elbow


Pipe flanges

Union

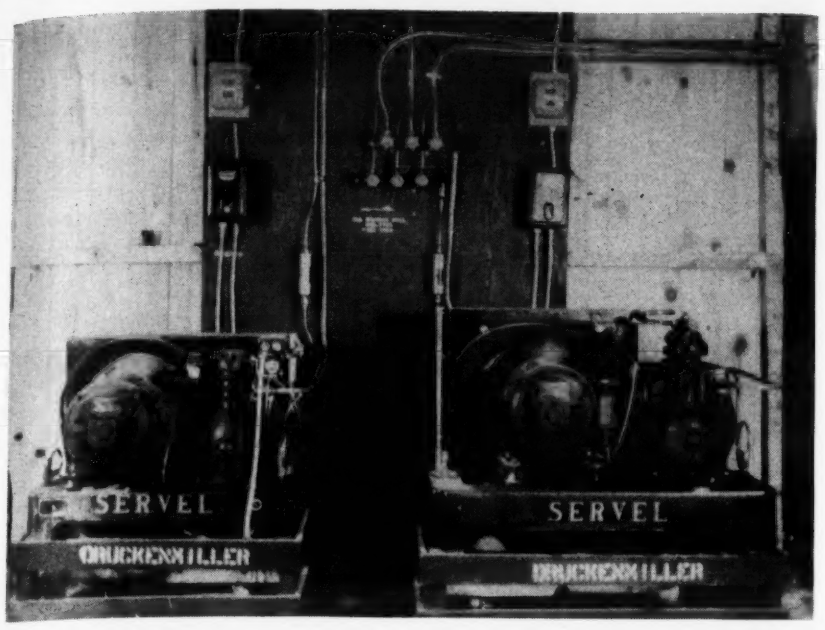
These Weatherhead Accessories

Testing valve


Charging hose

THE WEATHERHEAD COMPANY

Worth Showing To Prospects



Special wooden bases on which the condensing units set well above the floor, but which also permit easy removal, are one of the "extra things" that Charles Druckenmiller, Philadelphia dealer and service engineer, does to make his jobs "just a little bit better." (See story on opposite page.) Note also the panelboard, and neat manner in which tubing is run.

Joins Carolina Firm

FLORENCE, S. C.—Dave Robinson has joined Walker Electric Co., Westinghouse dealer, as salesman.

Named Kelvinator Dealer

WARRENTON, Va. — Fauquier Furniture & Electric Co. has been appointed full-line Kelvinator dealer.

Service Men Taught To Show Customers How To Find Name In Phone Book 'Yellow Section'

NEW ORLEANS—A simple idea which has been responsible for 90% of "repeat calls" to Frigid Refrigeration Service Co. here is the use of the telephone directory whenever any of the company's five service men service a refrigerator in a telephone-equipped home.

Instead of pasting a label on the box, or leaving a card which is likely to find itself in the wastebasket in a few days, the service man asks the housewife if he may show her the company's display advertisement in the yellow directory pages. This advertisement pictures the company's yellow-and-blue service trucks, and the building, with its sign shaped like a refrigerator. The telephone number is played up in half-inch type.

Turning to the advertisement with the housewife watching, the service man points out that the name "Frigid Refrigeration Service" is close to the popular-brand refrigerator advertisements on the same page, mentions the telephone number, and if possible, asks her to repeat the name and phone number at least once. There is a psychological point here in that having once pronounced the more-or-less difficult to enunciate name, the woman is likely to remember it thereafter.

Calling the advertisement to the housewife's attention, and frankly explaining that Frigid Refrigeration Service is anxious to maintain her as a customer has shown excellent results—with the majority of customers listed on the books having been served two to five times. "We think employment of psychology is particularly important in this competitive field," says George W. Mims, president. "And we get much better returns from spending a few extra minutes with the customer than could be achieved with premiums or the use of labels."

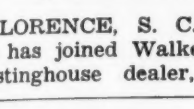
Savage's 1941 Catalog 'Takes the Lid Off'

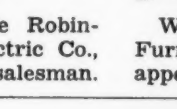
UTICA, N. Y.—Savage Arms Corp. strikes an unusual note in the presentation of its 1941 ice cream cabinet line by having the cover of its catalog simulate the lid of a Savage cabinet.

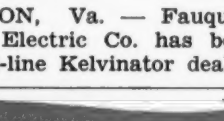
A card, apparently standing on the catalog, invites the reader to "Lift the Lid on Savage Quality," and leads into a presentation of the new 1941 line of eight new self-contained "Thrift" cabinets, four new remote cabinets, the new "service-sealed" compressors, and truck refrigeration equipment offered by the company.

Quality construction features are emphasized throughout the catalog.

HEAD ON WEATHERHEAD Valves and Fittings


Cross

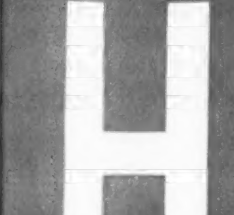

Tube elbow


Pipe elbow

Line strainer

Compressor valve

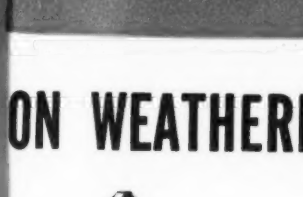
Line filter

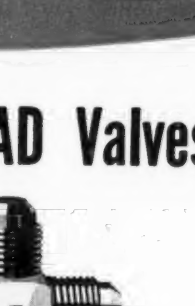

Pressure relief valve

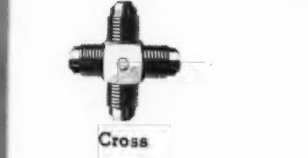
Receiver tank valve

Shut-off valve

will make your job easier...


Flaring tool


Receiver tank


Cutting tool

Refrigeration Valves, Fittings and Accessories

Silica Gel Dryers and Filters

★ Engineered to do the job.
★ Silica Gel—chemically stable, powerful moisture absorbent and acid remover.
★ All Metal Construction—stainless steel screens—no felts or organic filters.
★ Hydrogen Welded—a single brazed assembly—no gaskets—no solder.
★ Extra capacity—Silica Gel takes up more moisture.
★ Zero Pressure Drop—Full flow of refrigerant at all times.
★ Rechargeable and non-rechargeable types.
★ Interchangeable design—proper unions make one dryer adaptable.
★ A capacity for every job.

See us at Booths 336 · 337 · 338 Stevens Hotel January 13 to 16

CLEVELAND, OHIO

'Discount Selling' Probe Will Highlight Department Store Appliance Session

(Concluded from Page 1, Column 1)
merchandising division, while a joint meeting of the controllers' congress and the credit management division, convened at the same time, will devote its attention to a discussion of instalment selling. The appliance session will be under the chairmanship of Philip Du Boff, of Bloomingdale Bros., New York City, while the instalment selling discussion will be led by L. L. Kinsey, controller of the M. O'Neil Co., Arkon, Ohio.

Major appliance meeting will be a two-part affair, with the first part devoted to a discussion of general sales and advertising trends, and the second concerned exclusively with "discount selling," a development of growing concern to appliance retailers.

On the first section of the program, a statistical survey of the trend in appliances will be presented by Arthur Hirose, of McCalls magazine; H. U. Mann, of Electric Vacuum Cleaner Co., will emphasize that "Appliance Selling is Specialty Selling"; and Bob Agee, of Associated Gas Appliances, will discuss the topic, "Appliance Advertising Needs Punch."

The presentation of "Discount House Selling" will be handled by Earl Lifshey, of Fairchild Publications, and Julien Elfenbein, of Haire Publications. Round-table discussion will follow as to how the problem may be met and solved most effectively.

The session on instalment selling will hear presentations of "Are You Treating Your Instalment Customers Squarely?" by Albert Haring, professor of marketing at Indiana University; "Do You Know Your Instalment Costs?" by Otto C. Lorenz, New York City management engineer; "Instalment Selling Problems Confronting Department Stores in 1941," by A. C. Gay, of the Fair, Chicago; and "An Efficient Credit Operation of a Medium-Sized Store," by J. H. Morrison, credit manager of Brown-Thompson, Inc., Hartford, Conn.

Appliance retailers interested in instalment selling problems also may find of interest a general discussion of credit legislation, scheduled for the morning of Jan. 14, feature of which will be the first presentation before a business group of a newly proposed uniform law to regulate instalment selling, drafted by the Russell Sage Foundation. Rolf Nugent, director of the foundation's department of consumer credit studies, will discuss the proposed law. The question of whether leading retail groups should get behind some form of instalment regulation at this time will be considered by Irving C. Fox, N.R.D.G.A. counsel.

At another credit session, scheduled for the morning of Jan. 15, one point of interest will be a discussion of "Instalment Selling at the Customer's Doorstep," by George H. Mersereau, credit manager for Albert Lifson & Sons, Elizabeth, N. J.

A general session of the merchandising division on the night of Jan. 15 will be devoted to discussions of "informative selling," with Lew Hahn, N.R.D.G.A. general manager, as chairman. Discussions at this session will center around what dependable information can be furnished to the customer on labels, and what information customers are genuinely interested in receiving.

Prospect-Swapping Plan Ups Appliance Volume

DALLAS, Tex.—Combining appliance sales with complete home modernization by joining sales forces with a building supplies firm, North-Bell Hardware Co. here is experimenting with a plan that has salesmen of each firm trading prospects to increase profits for both companies.

To aid the coordinated effort, the two firms have worked out a joint finance plan providing for payment of the cost of modernization on a budget plan over a three-year period.

In selling appliances, outside salesmen often find that the prospect is interested in exterior and interior modernization as well as in appliances. Under the present plan, the appliance salesman turns over such a prospect to the building supplies salesman, who works out a complete plan of building and decoration.

In like manner, the building supplies salesman gets many tips on prospects for electrical appliances.

Sam's Selling Slants

V. E. ("Sam") Vining, merchandising manager for Proctor Electric Co., is the industry's most colorful salesman. This is the twenty-second of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937.

COGITATE

I am fed up on salesmen who never look at the things they are selling—and there are literally thousands of them.

Listen—

Go park your hips on a chair and take a good long look at that gadget from which you make your living.

And I'll give you a tip—if, after about fifteen minutes of concentration, you haven't found a new sales argument, a new approach, something you have missed in your presentation, something new to talk about, you need a mental massage.

Your sales manager can give you information, inspiration, guidance—he can drive you to work, kid you, shame you, give you prospects, and help close your deals.

But—

He can't give you initiative, brains, or good common horse sense.

He can put ideas in your head, and words into your mouth; he can draw pictures for you, or explain a puzzling point—but the sales manager never lived who can make you produce unless you, yourself, do something besides put one foot in front of the other and call it a day's work.

Now, sit down in front of that gadget and develop a wrinkle between the eyes.

It'll pay.

Parties Are the 'Pay-Off'

This Dealer Gives His Salesmen Picnics Instead of Prizes

ST. LOUIS—"Eat, drink, and be merry, for that's the way to get sales" might well be the guiding slogan of Harry Hesse, local General Electric dealer, for Mr. Hesse relies principally upon fairly frequent and extremely informal get-togethers of one sort or another to keep his men working together in harmony.

Mr. Hesse, like many another appliance merchant, runs his business on a percentage of quota basis, and rewards his salesmen according to their degree of quota achievement. But instead of offering merchandise or cash prizes, as is commonly the practice, Mr. Hesse usually substitutes some sort of a group outing.

These excursions may take the form of a fishing or hunting trip, or maybe just a good old-fashioned picnic. But in any case the company stands the bill for the eats, the drinks, the transportation, and any other expenses.

About half a dozen of these affairs are held each year. Then in January, to cap the year's sales activities, Mr. Hesse takes the whole crew on a three-day outing to a farm in the Ozarks—providing, of course, that the men earn this trip by piling up a satisfactory year's record. Do the men like this idea? Well, in all the seven years that Mr. Hesse has been making this offer, they've never once failed to collect.

THE NEW UNIVERSAL COOLER HEAVY-DUTY SEALED UNIT

Means Elimination of 60 to 75% of All Service Calls

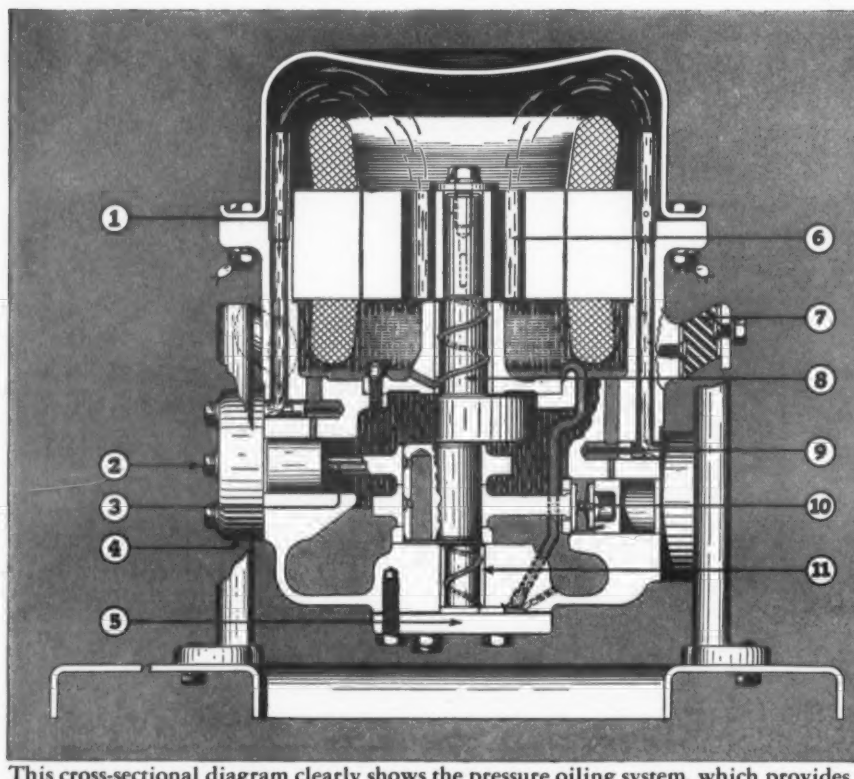
And Valves Easily Serviced on the Job

The compact appearance of the new Universal Cooler hermetically-sealed unit reflects the efficiency of its design. Exceptionally light in weight—72 to 105 pounds—this unit is available in five sizes, 1/8, 1/6, 1/4, 1/3 and 1/2 h.p.

UNIVERSAL COOLER announces a new, hermetically-sealed, commercial unit designed especially for ice cream cabinets. While possessing all the advantages of a hermetically-sealed design, the new unit eliminates all of the disadvantages associated with sealed machines in the past—for it can be serviced *right on the job.*

It is not necessary to cut open any welded steel shell to change a discharge valve reed. Both suction and discharge valves may be easily replaced by removing the externally-located cylinder heads without disturbing refrigerant line connections. Here is the answer to the service manager's prayer! And no extensive inventory of complete units for replacements is required.

Note cross-section diagram below and the list of major features which mean long life and efficient, quiet, positive operation.



1. Sealed against dirt and moisture. Seal prevents tampering.
2. Cylinder heads and valve plates located externally.
3. Connecting rods are S. A. E. 64 Bronze.
4. Removable valve plates permit quick replacements.
5. Oil pump provides forced lubrication to all moving parts.
6. Oil completely separated from suction gas by centrifugal force while passing through flues of rotor.
7. Rubber in shear suspension eliminates vibration.
8. Vertical shaft design eliminates main bearing load.
9. Sufficient oil metered to suction gas in cylinders to provide quiet valve operation.
10. Constant flow of oil to pistons and wrist pins.
11. Bronze bearings throughout. All bearings and cylinders in one casting. Diamond bored from one fixture setting.

This cross-sectional diagram clearly shows the pressure oiling system, which provides a constant flow of oil to all moving parts regardless of oil level. Note vertical shaft which removes all weight from main bearings, and accessible, outside cylinder heads located in air stream.

Universal Cooler

UNIVERSAL COOLER CORPORATION • MARION, OHIO

Creative Design . . . Application Engineering . . . Precision Manufacture . . . Economical Production

Gilmer BELTS

Made by belt specialists . . . on the largest assortment of V-moulds in the world

Gilmer V-Belts fit 6800 models, 153 makes of electric refrigerators; also oil burners, stokers, air conditioners, beer pumps, water pumps, compressors and other appliances.

Gilmer jobbers carry full stocks ready for prompt deliveries anywhere.

Write for FREE copy of "America's Belt Bible"

L. H. GILMER COMPANY
TACONY, PHILADELPHIA, PA.

The Oldest Firm of Rubber Fabric Belt Specialists

First Conference on Refrigeration Selling Tuesday At the Stevens

CHICAGO—Roster of speakers and discussion leaders for the First National Conference on Refrigeration Selling, to be held at 2:30 p.m. Jan. 14 in the South Room of the Stevens hotel under sponsorship of American Society of Refrigerating Engineers, has been completed by the committee.

Membership of this committee includes Ivan Corcoran, Detroit; Oliver C. Eckel, Boston; J. S. Forbes, Pittsburgh; F. E. Jernberg, Chicago; Lee C. Leslie, Philadelphia; T. H. Metzler, Cleveland; M. E. Miller, Chicago; J. M. Oberc, Detroit; A. B. Schellenberg, St. Louis; Willis Stafford, Chicago; E. L. Tramposh, Kansas City; K. B. Thorndike, Detroit; and E. A. Vallee, Milwaukee.

Refrigeration sales executives, engineers, and all other persons interested are invited to attend the session, theme of which will be "Better Cooperation Between Engineering and Selling." George F. Taubeneck, editor and publisher of the NEWS, will be chairman.

David C. Prince, manager of commercial engineering for General Electric Co., Schenectady, N. Y., will open the conference with a paper on "Application Engineering in the Administration of Technical Sales," and Luis Gibson of George H. Gibson Co., New York City, will follow with an outline of "The Need For Business Minded Engineers."

Formal discussion of these talks will be made by L. L. Lewis, A.S.R.E. president, and Earl A. Vallee, Rema president. General discussion from the floor will follow.

"Incorporating New Ideas Into Research" will be presented by William Goodman, consulting engineer for Trane Co., La Crosse, Wis., with formal discussions of this address scheduled by M. E. Miller, assistant to the president of Peerless of America, and Claude Brunton, past president of R.S.E.S.

Dr. Kenneth Dameron, professor of marketing at Ohio State university, will close the conference with a discussion of trends in the whole field of selling, and a summary of the most interesting points developed by other speakers on the program.

A general discussion will follow.

Irving J. Knudson Dies In Arizona

(Concluded from Page 1, Column 3)

with the thought that the climate might aid his recovery.

Active in industry cooperative and association activity, Mr. Knudson was one of the founders of the Refrigeration Equipment Manufacturers Association. Always ready to give his time and counsel to any plans that might speed the industry's progress, he was one of the first to promote the All-Industry Show idea.

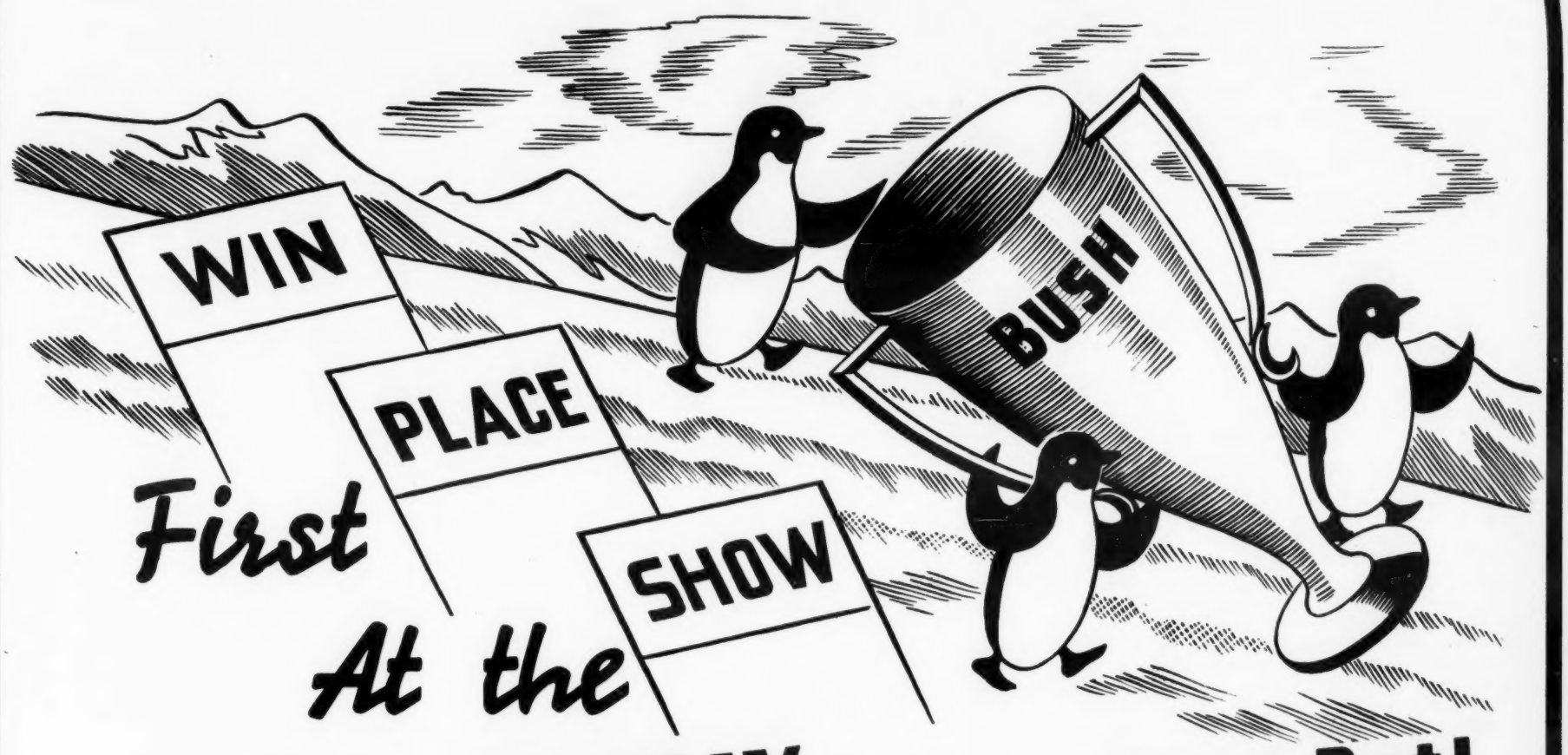
He was also active in the affairs of the American Society of Refrigerating Engineers, and rarely missed either a local meeting or a national convention. Probably no other individual had a wider acquaintanceship in the refrigeration equipment and supplies field than did "Irv" Knudson.

Practically his entire business career had been spent with the American Radiator & Standard Sanitary Corp., and its subsidiary, the Detroit Lubricator Co. He got his start in the refrigeration field selling cast iron sections to the refrigeration industry, but when Detroit Lubricator got into the manufacture of expansion valves he became interested in this line, and is generally regarded in a sense as the man who "introduced" expansion valves to the refrigeration world.

Mr. Knudson was born April 11, 1891. He was a graduate of the University of Illinois. During the World War he served with the A.E.F. in France, being wounded in action.

A wife and a daughter survive him. He made his home at 211 Abingdon, Kenilworth, Ill.

Bush Coolers..



First At the

The BUSH DISPLAY is your best Bet!

Take a tip! Be sure to visit booths 14 and 15 when you're at the 3rd All Industry Refrigeration and Air Conditioning Show! Penguin Pete will be there ready and waiting to give you the "inside dope" on the new BUSH Line of advanced refrigeration units — including those illustrated below — with the "Defrosto" and "Supreme" Unit Coolers in actual operation.

You'll find at first hand why Bush engineering, advanced design, efficient performance, and unusually low prices have won for BUSH "first honors" for sales and profits!

Let's make it a date! The Bush Display — Booths 14 and 15 — 3rd Annual All Industry Refrigeration and Air Conditioning Show — Jan. 13-16 — Stevens Hotel, Chicago.

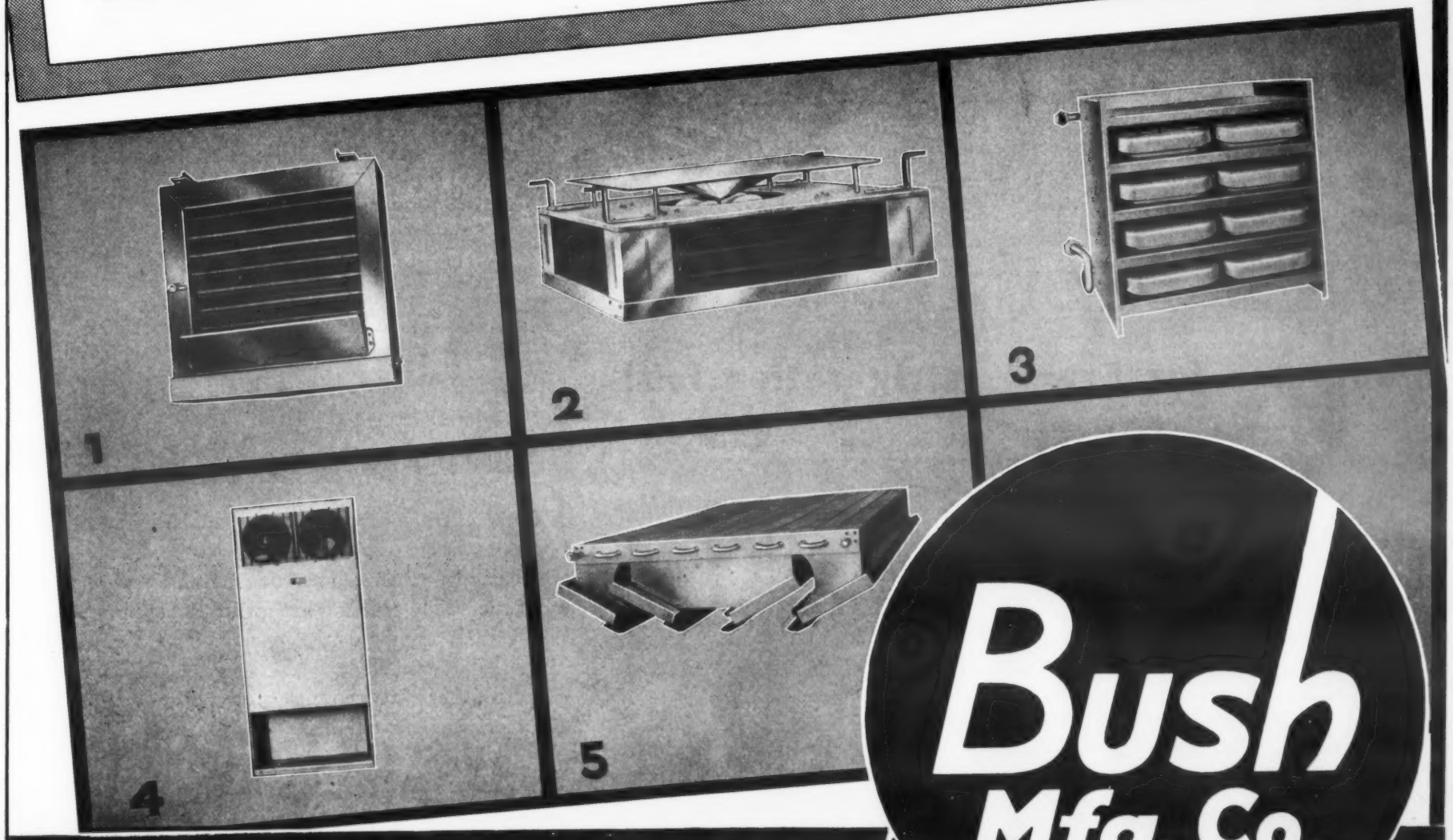
1 —*Bush Standard Unit Cooler*

2 —*Bush-Recold "Supreme"*

3 —*Bush Ice Maker*

4 —*Bush Panel Cooler*

5 —*Bush Circulator Coil*



COMMERCIAL COOLING UNITS by

Bush Mfg. Co.

BUSH MFG. CO. • HARTFORD, CONN. • 610 N. OAKLEY BLVD. • CHICAGO

The Big Banquet Will Last From 7 P.M. To Dawn

Broadly speaking, the same general arrangements will prevail for the Third All-Industry Banquet, floor show, and dance on Tuesday evening, Jan. 14, which were followed at the successful 1939 and 1940 All-Industry Exhibitions.

The location will be the same—the Grand Ballroom of the Stevens hotel. However, on account of the materially larger number expected this year, it will be necessary to sit a portion of the banqueters in the foyer immediately adjacent to the ballroom.

Following the dinner, tables will be removed from a portion of the ballroom at which time those from the foyer section will be moved in for the program, the floor show, and the dance.

As during previous years, the ballroom doors will be thrown open at 6:30 p.m. sharp. Those attending will go directly to the tables at which places have been reserved for them. These reservations, by the way, will be made during the first two days of the Show at the Banquet Ticket Sales Office located on the lobby floor adjacent to the registration counters. All persons desiring to attend the banquet are urged to purchase their tickets early and to make their table reservations at the same time.

Promptly at 7:00 p.m. Earl A. Vallee, president of Rema, members of the board of directors of Rema, and the guests of the association who will sit at the speakers' table will take their places at it.

Following the singing of the National Anthem and a photograph of the assemblage, the banquet service will begin.

In order that all places may be filled when a photograph is taken and particularly in honor of the honored guests, all holders of reserved table tickets are urged to be in their places by 7:00 o'clock. Unoccupied places at reserved tables not filled by this time will be made available to those purchasing tickets after the reservation desk has been closed.

During the dinner hour an eight-piece orchestra will provide music. Following dessert the gathering will be called to order by President Vallee who, after extending greetings appropriate to the occasion, will introduce the guests at the speakers' table.

FLOOR SHOW AND DANCE

The floor show, promised by Chairman "Mel" Knight to be much bigger than last year's highly successful entertainment, will last from 1½ to 2 hours, and will have a cast of 44 people.

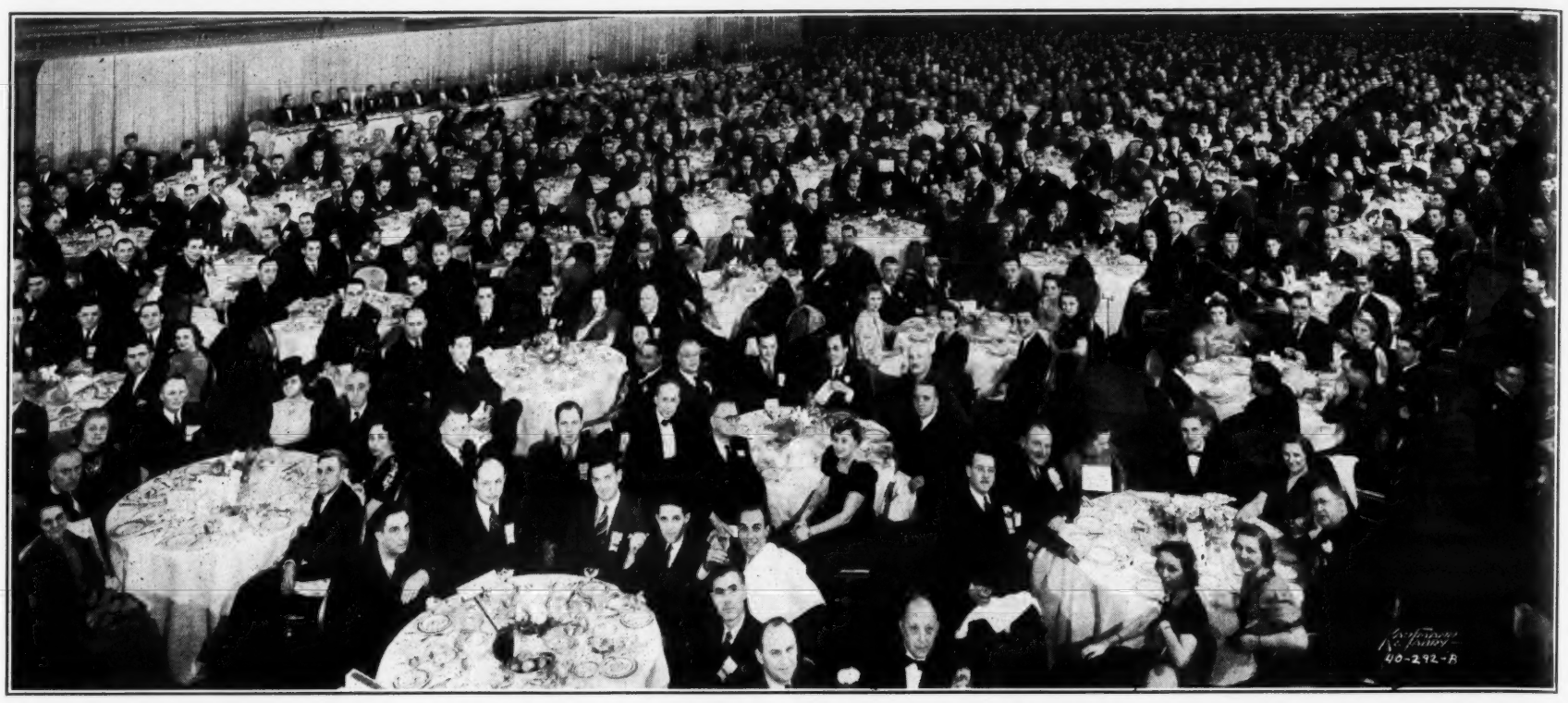
Many of the best known acts in the world of the stage will help to make the fast moving show probably better than any night club show that could be seen any place.

Still held a "mystery" by Chairman Knight is the promised "star" of the production—a headliner in the stage and radio world, the type of a performer that you may often hear and hear about, but seldom get an opportunity to see in person.

Playing for the floor show, and for the "dancing until exhausted" which will follow the conclusion of the floor show, is Lew Diamond's NBC orchestra, which has just had a highly successful engagement at the Empire Room in the Palmer House hotel.

Chorus for the floor show will be the Dorothy Dorben Dancers, stars at the Edgewater Beach show. Among the other acts are the Three Reddingtons in "Bouncing Fun"; Clair & Hudson, balance and acrobatic stars; The Four Franks, world's fastest tap artists; the Malo Trio, thrills in adagio; Chesny & Worth, singing stars from the West Coast; the Four Sidneys, cycle stars; Chaz Chase, comedy star of many Broadway shows.

All Branches of the Industry To Banquet Together Jan. 14



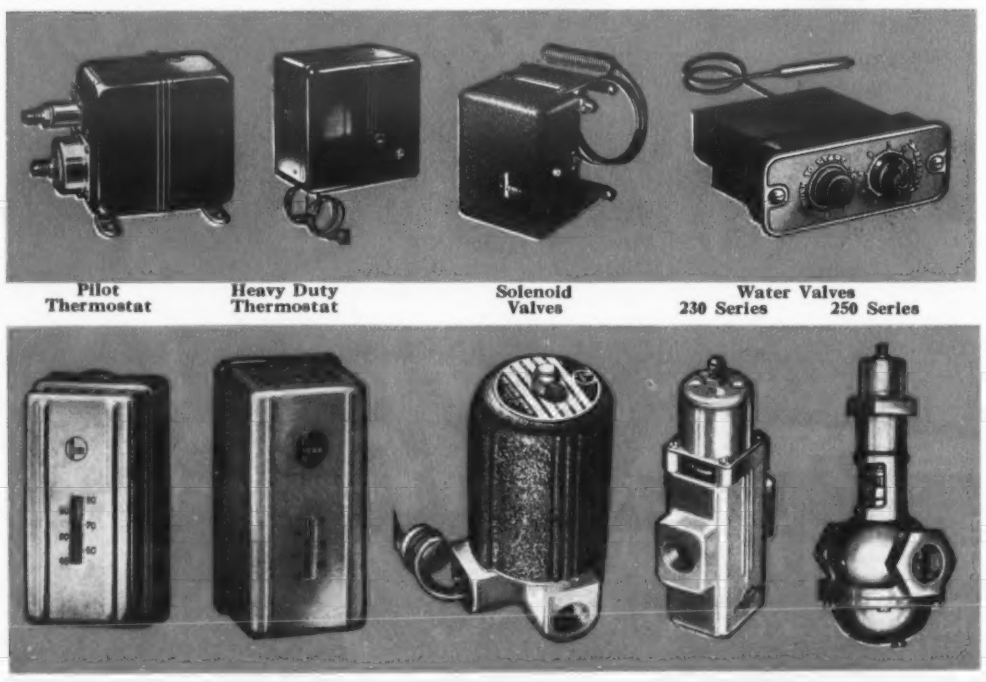
This scene from the Second All-Industry Banquet last January will be repeated Tuesday night in the Grand Ballroom of the Stevens hotel in Chicago when the Third All-Industry Banquet will be held in conjunction with the All-Industry Exhibition. The festivities will include an eight-course dinner, a colossal floor show, with dancing afterwards to Lew Diamond and his NBC orchestra. There will also be music during the dinner.

Take Your Choice — STANDARD OR CALIBRATED CONTROLS!

Pressure and Temperature to ½ HP A.C. or D.C. . . . to 1 HP A.C.—¾ HP D.C. . . . to 2 HP Single or Polyphase

Pictured above, left to right are: Type 265T12 Beverage Cooler Control; Type 3265P Semi-Commercial Calibrated Pressure Control; Type 3260P Commercial Calibrated Pressure Control; Type 3713DBPO3 Dual Two-Pole Pressure Control with bi-metal overload protection.

Controls for Every Refrigeration Job!



DeLuxe Features—Standard PENN Dependability

PENN offers you your choice—standard controls with non-calibrated adjustments for applications where user adjustment is to be discouraged . . . calibrated controls for applications where frequent changes in setting must be made. Available for pressure or temperature control service in single pole models for fractional horsepower, single phase service, as well as two-pole models for single or polyphase service to 2 HP. These additions to the Penn line further simplify the installation engineer's problems by providing exactly the control instrument best adapted for each type and class of application. Today, as in the past, you can standardize on Penn for complete confidence in performance . . . maximum convenience in one source of supply.

See these and other PENN CONTROLS at Spaces 100-101
REFRIGERATION AND AIR CONDITIONING EXHIBITION—STEVENS HOTEL, CHICAGO
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

Service Engineers Convention Program Offers New Information on Commercial Jobs & 'Quiz' Session

(Continued from Page 1)

All-Industry Refrigeration and Air Conditioning Exhibition, also in the Stevens hotel.

At the Tuesday morning session W. R. Warner of Frigidaire will discuss "Multiplexing Commercial Installations," one of the most important of all installation problems. Mr. Warner has spent a great deal of his long career with Frigidaire in conducting field service schools.

Also at the Tuesday session R. J. Thompson, Kinetic Chemicals, Inc., will offer an encyclopedia of information on the "Freon" refrigerants, and will make some of the demonstrations with the refrigerant for which he is well known.

"Problems of Refrigerant Distribution Through Multi-Circuit Coils," will be discussed at the Wednesday session by A. B. Schellenberg, Alco Valve Co. Mr. Schellenberg and his associates at Alco have put forth considerable time and effort in research on this subject, which has often proved something of a stumbling block to installation and service engineers.

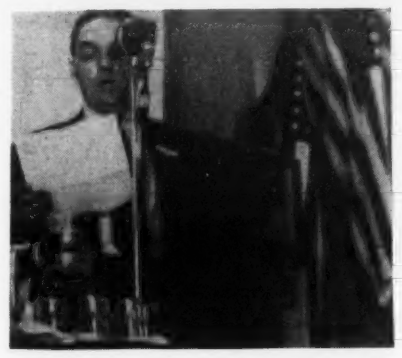
In "Business Aspects of the Service Business," also to be presented Wednesday, C. B. Herbert of Waterloo, Iowa, will discuss business methods for service men, shop layout and appearance, and methods of getting customers.

Officers of the society, who developed the program, and who will preside at the convention, include:

G. A. Burns, Toronto, Canada, president; E. A. Plesskott, St. Louis, vice president; C. Buschkopf, Beaver Dam, Wis., second vice president; S. A. Leitner, Kansas City, treasurer; H. T. McDermott, Chicago, secretary; and S. B. Garland, Worcester, Mass., sergeant-at-arms. Directors are Willis Stafford, Aurora, Ill.; E. V. Black, Uniontown, Pa.; A. W. Gruber, Ironton, Ohio; M. G. Ogden, Atlanta, Ga.; J. B. Shepherd, Winnipeg; and J. L. Driskell, Burley, Idaho.

In addition to participating in the Third All-Industry Refrigeration and Air Conditioning Banquet Tuesday night, the R.S.E.S. will have its own party Wednesday night in the north ballroom and annex of the Stevens hotel. It will be in keeping with the other very lively parties which have marked past R.S.E.S. conventions.

Special plans are being made for the ladies, and the National Auxiliary of the R.S.E.S. will meet during the convention. Entertainment plans are being made for the ladies on Tuesday and Wednesday afternoons.



Claude Brunton, Huntington, W. Va., is chairman of the R.S.E.S. membership committee.

Heads Service Engineers

Gordon Burns, Toronto, Canada, president of Refrigeration Service Engineers Society, and Mrs. Burns.

Complete R.S.E.S. Program

Monday, January 13

— 8:00 a.m. to 10:00 a.m. Registration.
—10:00 a.m. Convention called to order by Chairman.
—10:15 a.m. Greetings from Rema, E. A. Vallee, President.
—10:30 a.m. Introduction of National Officers.
Address by President G. A. Burns.
Secretary's Report.
Treasurer's Report.
—11:15 a.m. Committee Reports.
—11:45 a.m. Appointment of Convention Committees.
— 1:00 p.m. Secretaries' Luncheon.

Tuesday, January 14

— 9:30 a.m. "Information Please." Bring your questions. An open forum discussion on questions from the floor.
—10:00 a.m. "Absorption Type Air Conditioning Systems." Williams Ice-O-Matic representative.
—10:30 a.m. "Multiplexing Commercial Installations." W. R. Warner.
—11:00 a.m. Sound Film.
—11:30 a.m. "'Freon' Refrigerants —Lecture and Demonstration." R. J. Thompson.
—12:00 noon. Report of Nominating Committee.

Wednesday, January 15

— 9:30 a.m. "Information Please."
—10:00 a.m. "Problems of Refrigerant Distribution Through Multi-Circuit Coils." A. B. Schellenberg.
—10:30 a.m. "Take-It-Or-Leave-It." An educational fun fest which pays real money. Master of Ceremonies—L. C. McKesson.
—11:00 a.m. "Business Aspects of the Service Business." C. B. Herbert, Waterloo, Iowa.
—12:00 noon. Reports of Convention Committees.
— 9:00 p.m. R.S.E.S. Party.

● The Brunner Manufacturing Company invites you to see and inspect the latest, most outstanding, profit building refrigeration equipment at the Refrigeration Show.

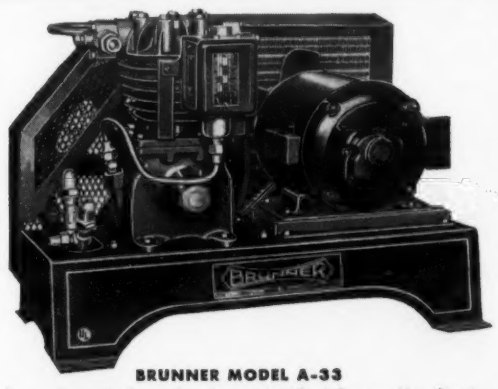
Designed and engineered with foresight for today's and tomorrow's commercial refrigeration demands, Brunner condensing equipment is the last word in efficiency, operation and cost reducing performance. A complete line, new models including a semi-hermetic unit, and higher capacities, are a few Brunner advantages for 1941. All Brunner condensing units are engineered and built to the same precision specifications that have made Brunner famous throughout the world. All Brunner units carry the Underwriters' Laboratories approval and the U. L. Seal. Brunner units are available from ¼ to 25 tons of refrigeration.

Be sure not to miss the "hit of the show", January 13 to 16, Hotel Stevens, Chicago. Stop at the Brunner Booths 339-340. And if you miss the show, write for the new Brunner catalog. It illustrates the complete line of Brunner dependable, cost saving refrigeration equipment. Brunner Manufacturing Co., Utica, N.Y., U. S. A.

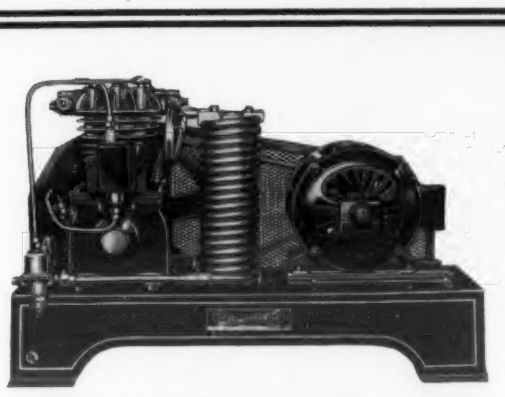
GET THESE MONEY SAVING FACTS

SEND for the "inside story". Brunner superiority illustrated point by point.

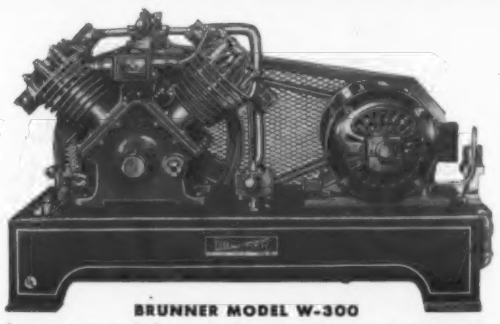
BRUNNER
CONDENSING UNITS



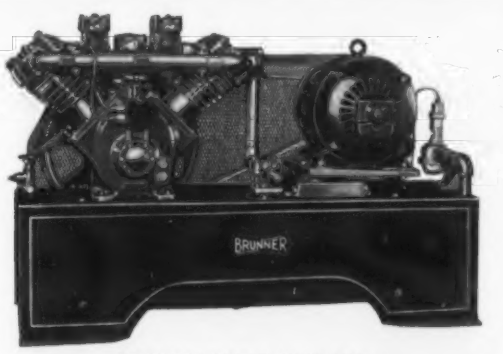
BRUNNER MODEL A-33
⅓ h.p. air-cooled condensing unit, ideal for smaller display cases, cabinets and boxes.



BRUNNER MODEL W-150
1½ h.p. water-cooled condensing unit for average heavy-duty commercial applications.



BRUNNER MODEL W-300
3 h.p. water-cooled, 4 cylinder unit. Quiet and efficient for commercial refrigeration and air conditioning service.



BRUNNER MODEL W-25,000
25 h.p. water-cooled condensing unit for heavy-duty commercial and air-conditioning installations.

PERSONALITIES
YOU WILL MEET AT THE SHOW

By George F. Taubeneck and Phil B. Redeker

They Are Very Human

Successful personal relationships count perhaps as much as anything else in successful business. The kind of men you are dealing with influences the kind of deals you make.

And so it is that those who are coming to the Third Annual Refrigeration and Air Conditioning All-Industry Exhibition will probably want to know something about the men they will meet, as well as the products they will see and study, the entertainment they will enjoy, and the programs to which they will listen.

For more than 10 years the NEWS has run "Personalities" pages which have delineated industry characters, "told tales out of school" about the so-called "brass hats" as well as about men out on the firing line, and in general acted something like the "Personals" column in a small-town weekly.

Inasmuch as the editor of the NEWS worked for eight years on a small-town weekly paper, this "personals" business came natural. Other editors of the NEWS, also small-town lads, have written columns of this sort from time to time.

When sending in their renewal orders to the subscription department, readers often mention these "personal" columns, and say they want more. So, occasionally, they get more. It seems that readers enjoy learning that the "big shots" are very human, and put on their pants one leg at a time just like the rest of us.

This time the editor and managing editor have collaborated—each contributing a number of sketches—on a series of quick glances at industry leaders who will take a prominent part in the All-Industry Exhibition activities.

These "Little Journeys to the Homes of the Great" are all too inadequate. But such glimpses, we hope, will make subscribers want to know these men better. We had to crowd these sketches into four pages, which is a shame, for we could have written a dozen more pages about other folks you'll see at the Show—folks we like, too. However, we have to save **something** for future issues!

* * *

Revolutionary!

Otto Klopsch of Wolverine Tube, the man with a name like hoofbeats-on-brick-pavement-at-dawn and a grin like a boy-who-has-just-received-a-second-helping-of-angel-food-cake, made an extemporaneous speech one blustery afternoon in December that is still reverberating.

The occasion was a meeting of the Sections Committee of the American Society of Refrigerating Engineers, in conjunction with the annual mid-winter meeting of the society in New York City. The Sections Committee consists of representatives of the various local Sections (chapters) of the organization.

All Otto did was to propose that the name of the organization be changed to the American Society of Refrigeration!

A lot of things have happened to the staid old A.S.R.E. in the last few years, things which no doubt singe the beards and curl the eyebrows of some of its oldest living inhabitants.

But Otto's proposal—made in a ringing speech which, honestly, would have done credit to a Patrick Henry—still has the good folk of the A.S.R.E. gasping.

Changing the name thusly, of course, means that the Society would expand to include men in the refrigeration industry whose interests and duties are more concerned with selling refrigeration products than with designing and making them.

He may have something there.

At any rate, the A.S.R.E. is taking official recognition of the fact that in order for engineers to live, somebody must sell the things they dream up, by staging the First Annual Conference on Refrigeration Selling Jan. 14, at the Stevens hotel in Chicago, in connection with the All-Industry Exhibition.

Come one, come all.

* * *

Otto Klopsch

Anyone who knows Otto personally, is acquainted with his supercharged ebullience, and understands his eagerness to build, to improve, and to get things done, won't be surprised at his earthshaking proposal.

OTTO KLOPSCH—Startled the A.S.R.E.

Otto was a noted athlete at the Case School of Applied Science (Cleveland) where he was a speedy basketball player and track star. He still moves and acts like an athlete.

From Case, he moved on to George Washington University, Washington, D. C., where he studied law.

His combined engineering and law training led to a job with the Bureau of Standards in Washington, after which he joined Frigidaire at Dayton. From Frigidaire he moved, in 1927, to Detroit and to Wolverine Tube.

Today, when he can play often enough, he is one of the best golfers in the Detroit district.

* * *

Jim Strachan

"When I first came to Pittsburgh from Canada," Jim Strachan, sales manager of Kerotest Mfg. Co. was saying, "there was a hockey club in Pittsburgh that learned about it, and knowing that most Canadians play ice hockey, they asked me to join them.

"Hell, I couldn't carry the puck from defense to center ice, but they found out I was big and could take it, so that's how I played ice hockey in Pittsburgh."

Jim Strachan can still take it, those who know him will testify. One of the most active sales executives in the game, Jim can keep going from early in the morning until late at night and somehow never seem to get tired—or at least he never looks tired.

When he's on the road or at a convention, he often gets to bed when the milk deliveries start, but he's always ready to see the customers bright and early the same day. A really big man without a trace of a bay window, Jim's appearance is the way you'd like to look, but know that you never can.

Because he can keep going so steadily and because he likes to be with people, Jim's acquaintanceship with the trade is one of the broadest in the industry. Perhaps the highest tribute to his abilities in his job and his knowledge of his own business comes from his field men—who will tell you that when they are to meet a tough prospect for a showdown, they want Jim along.

He keeps a close tab on all Kerotest promotion activities to the refrigeration trade, and many of these promotion ideas are his own, in some cases widely copied in the field. One fault we can find on his handling of the promotion is that he won't talk enough for publication about some of his good ideas.

With his wife (of whom you say soon after meeting "what a swell scout") Jim shoots a crack game of golf (matched by his wife's), and likes to attend sporting events.

A rabid football fan, Jim is staunchly loyal to his hometown favorites, but since Pitt started to de-emphasize football, this loyalty hasn't paid off too well! But mostly, we think, Jim enjoys just sitting around and talking with a lot of people in a convivial atmosphere.

* * *

Jim Hatch

Another big-family-man is Jim Hatch of Bush Mfg. Co., Hartford, Conn. Jim has four children, a son and three daughters.

There's a bit of romance connected with the birth of his son, James, Jr. A few months after marrying socially prominent Florence Marvin, Jim went off to France as a Second Lieutenant of Coast Artillery. While over there, James, Jr. was born.

This son has just been inducted into the Army, and is a member of an anti-aircraft batallion.

Jim, Senior, joined Bush in the days of its booming automobile radiator business; and when Bush went into refrigeration (1927), he helped pioneer the use of finned tubing in condensers—selling the idea to some of the largest manufacturers of electric refrigerators.

JIM HATCH—plays like Krupa?

Jim is a sailboat enthusiast. His boat is a familiar sight around the sound near Waterford, Conn.

He is a fine tennis—both lawn and table—player, and has other interesting hobbies, as per the above picture, taken at the Bush Christmas party, where Jim's skin-beating pleased and surprised employes.

* * *

Graff and Raney

Two Ranco top executives—E. C. Raney, vice president and general manager, and Ed Graff, sales manager—are photography enthusiasts. They are also charter members of the Columbus (Ohio) Downtown Quarterbacks' Club, where they unite with other grandstand coaches and decide what play Ohio State should have used last Saturday when it was third down, two to go, the ball resting on the opponents' 15-yard stripe.

Come to think of it, photography and football are two pretty good hobbies. Next to reading AIR CONDITIONING & REFRIGERATION NEWS, and getting fat on home cookin', there are no other pleasures we can recommend so highly.

As for photography, Mr. Raney goes in for color work, both still and motion. Mr. Graff, on the other hand, is never so delighted as when he can get a candid snapshot of some associate paring his toenails or snoring on his desk.

He balances this type of fun with a serious interest in music.

ALCO

Multi-Outlet Thermo Valves

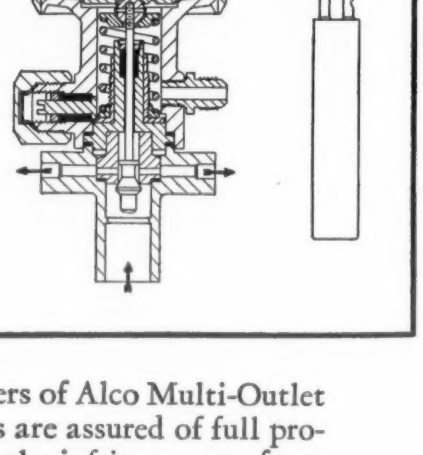
Increase Distribution Efficiencies Up to 35%- Increase Coil Capacities as Much as 20%

Range of Sizes:

FREON—From ½ ton to 50 tons.

METHYL CHLORIDE—From 1 ton to 100 tons.

Two to 36 outlets, depending on capacity.



● The Alco Multi-Outlet Thermo Valve is a combined Thermo Valve and distributor which eliminates the need for a separate distributor header.

Due to the patented design and construction, Alco Multi-Outlet Thermo Valves provide better distribution of refrigerant than is possible with any of the ordinary distributors or tube clusters now in use.

Distribution takes place within the valve body, *at the point of expansion*, and before separation of gas and liquid occurs. With Alco Multi-Outlet Thermo Valves, the flow of liquid refrigerant to each of the evaporator circuits is equal and direct and distribution is not affected by load changes.

The purchasers of Alco Multi-Outlet Thermo Valves are assured of full protection against the infringement of any existing application patents.

The controlled distribution in the Alco Multi-Outlet Thermo Valve eliminates distribution problems and three years of actual field experience has shown many cases of increased coil efficiencies up to 20 per cent.

It will pay you to get all of these advantages by specifying Alco Multi-Outlet Thermo Valves on your coils. A letter to Alco will bring you complete information. Write today.

ALCO VALVE COMPANY

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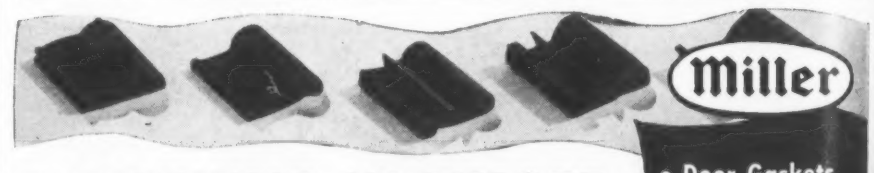
ALCO *Engineered Refrigerant Controls*

FOR HIGHEST EVAPORATOR EFFICIENCY



Miller

EVERYTHING IN RUBBER FOR THE REFRIGERATOR

• Miller offers the service engineer an authentic line of replacement parts that duplicate the original point for point in both design and quality. Each item is an exact duplicate of that supplied the refrigerator manufacturer, made from the same dies, of the same age and grease-resisting rubber compounds.

And because Miller is the No. 1 supplier of rubber parts to the refrigeration industry, it can provide replacements that enable you to service 80% of all boxes in use today. All items are stocked for immediate delivery. For complete information, see your local Miller jobber or write—

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- Unit Mountings
- Sponge Rubber Insulation
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- Breaker Collars
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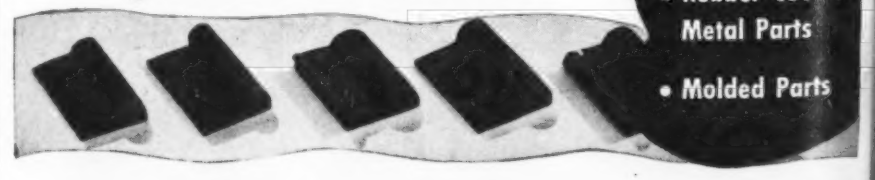
- Rubber Covered Metal Parts
- Molded Parts



Personalities at the Show

Harry Morrison

Curtis Refrigerating Machine Co. of St. Louis has for a refrigeration sales manager one of those rare birds who was trained as an engineer, worked for years as an engineer, began to develop a sales viewpoint, and finally became a successful sales executive.

He is not the only one such in existence, but Harry Morrison does belong to an unusual species. A salesman through and through, he has never forgotten his engineering,

HARRY MORRISON (left)—
Once an engineer, not always.

and turns his knowledge of what makes the wheels go 'round to good account in his selling strategy.

For a hobby, however, Harry follows the rule rather than the exception. He likes photography, even as you and I.

Not long ago he ran into a snag of tough luck. He had just completed the building of a new home, and was on the verge of moving in when disaster struck.

Painters, using some sort of cleaning fluid in the basement, happened to ignite it—which set off an explosion and consequent fire that not only necessitated rebuilding part of the new home, but resulted in nearly fatal injuries to the painter who had started the conflagration.

* * *

M. E. 'Dusty' Miller

There are plenty of phoney stories about "self-made" successful men, but you can find the genuine article in M. E. "Dusty" Miller, general manager of Peerless of America, Inc.

Orphaned at an early age, he and his brother Jack (Detroit district manager for White-Rodgers) made their own way up in this world, including earning their passage through four years at Northwestern University.

As boys they "lived around" with relatives in small Illinois communities, sometimes being separated with the result that they played against each other in high school athletic contests.

Part of this period they spent with an aunt who put on high school pageants, moving from one town to another every few months, so that the boys had to learn how to adapt themselves quickly.

In the summer months between their years at Northwestern U. they worked on cruise boats on Lake Michigan runs, and capitalized on the money-making possibilities in their jobs so well that they made enough to live comfortably during the other nine months during which they went to school.

In fact, there were times, they relate, after they were out of school when they would look back with envy on the income they had turned up in those summer "vacations."

"Dusty" is the kind of a man that you feel sure—upon meeting—gets along well with people, and gets them to do things for him. Sincere, considerate, and a man who remembers his promises, he is a fine type of business leader.

Shortly after he left college he joined an insurance company, of which he became sales manager within a short time. With Peerless he has been midwestern sales representative (where he knew practically everybody worth knowing in three or four states), then was sales manager of the New York office before becoming general manager of the organization.

Sometimes jokingly called "Million Dollar" Miller by his friends and associates because he has big ideas and likes to do things in a big way, he nevertheless makes a large percentage of his big ideas click.

A very good athlete in his younger days, playing football and basketball, he still likes active outdoor sports. Riding, swimming, and tennis claim most of his attention in the matter of recreation.

Something of a mystery surrounds the "M. E." in front of his name. We know what they stand for and what he was named after, but we doubt if many other people in the industry do. But it doesn't matter anyway because everybody calls him "Dusty" as soon as they meet him.

* * *

'Dick' Dawson

He's a good salesman, a good engineer, and he's entertaining as an Olsen and Johnson show. That might be a capsule description of R. S. "Dick" Dawson, sales manager of Alco Valve Co.

Without elaborating too much on his capabilities as a salesman and engineer, which members of the trade know more about than do we,

DICK DAWSON (and wife)—
Frank Buck, Jr.?

we nevertheless want to call attention to one very admirable business characteristic—the direct way in which he approaches any problem. He always lays his cards on the table—doesn't hedge—lets you know quickly if he can do it or if he can't. It's refreshing to do business with a man like that.

Personally, "Dick" is a very enjoyable character. A master of the great American pastime of "kidding" one's friends, he does it in an effective deadpan, pseudo-serious manner. He's also a better-than-fair mimic, and can keep a dinner table group howling for an hour if in the mood.

He likes to tell stories on himself as well as kidding others. Recently his associates at Alco have been calling him "Frank Buck, Jr." after his return from a hunting expedition in the wilds of Missouri.

"How did you do?" he was asked when he got back.

"Not too good not too bad," he replied. "Availing myself of the only opportunity that presented itself during the day I knocked down a bird with one shot."

"What kind of a bird?" he was queried.

"Why it was a red-headed bird which—ahem—I believe is more commonly known in these parts as a woodpecker."

The father of three boys, the eldest two of whom are intensely interested in model airplane building, "Dick" likes to tell the story of the time he took his family out riding by the airport, and before he knew what was happening, found himself in a plane all set for a flight over the city.

Somewhat nervous over the prospect of a flight in other than a regular transport plane, his concern must have showed itself in his face, for he felt a reassuring pat on his shoulder from one of his sons.

"Don't look so worried, Pop," confided the boy. "I've looked over the lines of this ship and she's built right. We'll be okay, so relax and enjoy it."

* * *

Blaine Wiley

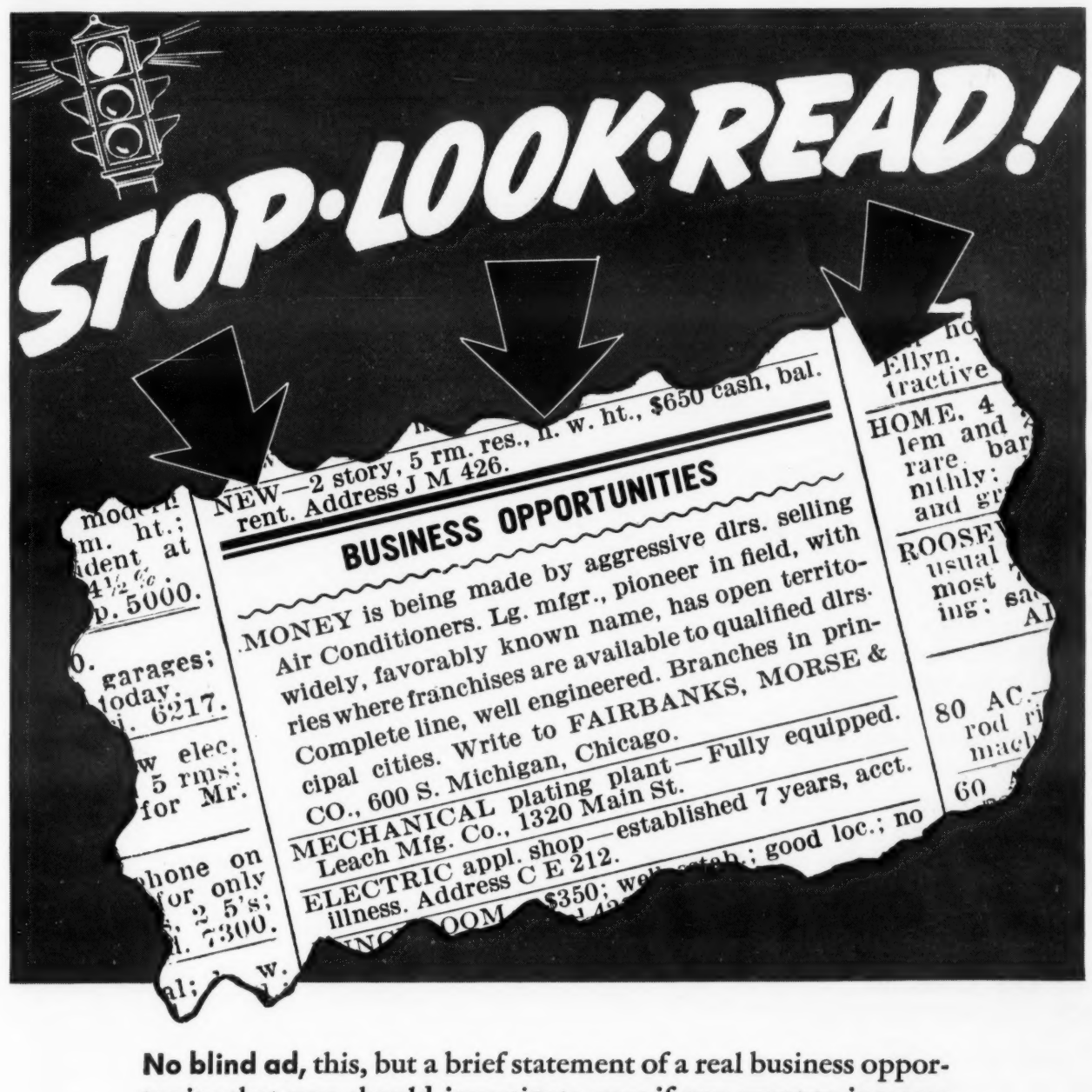
Another ex-service man who has found a post of command in the refrigeration industry is B. G. Wiley, assistant general sales manager of the All-Steel-Equip Co. He is in direct charge of Froz-n-Food Locker sales.

After attending the University of Chicago, Mr. Wiley enlisted in the U. S. Marine Corps (this was at the outset of the World War). Up through the ranks he rose—the hard way—to be commissioned a Lieutenant M. C. He served with troops in Cuba and Santo Domingo.

Incidentally, friends say that the title, "M. C." is one he strives to live up to diligently. He is an accomplished Master of Ceremonies, dispensing freely of a vast store of wit-&-humor whenever he sees food or drink on the festive board or bar.

He has been with All-Steel-Equip since 1923. Likes to fish. His father christened him Blaine, after James G. Blaine, with the hope that his son would always vote Republican. He has.

(More "Personalities," Page 24)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BUSINESS OPPORTUNITIES
NEW—2 story, 5 rm. res., h. w. ht., $650 cash, bal. rent. Address J M 426.
MONEY is being made by aggressive dlrs. selling Air Conditioners. Lg. mfgr., pioneer in field, with widely, favorably known name, has open territories where franchises are available to qualified dlrs. Complete line, well engineered. Branches in principal cities. Write to FAIRBANKS, MORSE & CO., 600 S. Michigan, Chicago.
MECHANICAL plating plant—Fully equipped. Leach Mfg. Co., 1320 Main St.
ELECTRIC appl. shop—established 7 years, acct. illness. Address C E 212.

No blind ad, this, but a brief statement of a real business opportunity that you should investigate *now* if you want to increase your firm's immediate profits and insure future prospects. For air conditioners are selling fast, and the market is scarcely scratched.

Here's why you'll profit *most* by selling FAIRBANKS-MORSE Air Conditioners

1. The name is a household word. Four generations have respected Fairbanks, Morse & Co. for fine engineering and manufacture of mechanical devices.

2. The F-M line is *complete*— ranges from small room coolers to year-round, complete air conditioners for the largest buildings.

3. F-M engineers know *local* needs —and are located in your vicinity. There are F-M branches in 35 principal cities.

4. F-M Air Conditioners make satisfied customers. This means minimum servicing costs, maximum word-of-mouth advertising for F-M dealers.

While there is still a possibility of a franchise being available in your territory, write Fairbanks, Morse & Co., Dept. 831, 600 South Michigan Avenue, Chicago, Illinois.

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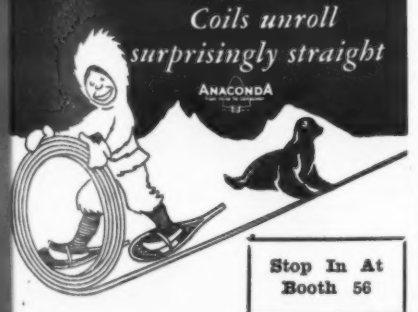
Air Conditioners

Anaconda Copper Refrigeration Tubes

Coils unroll surprisingly straight



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JANUARY 8, 1941

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Place Your Orders Now For Biggest Year of All

VISITORS to the All-Industry Refrigeration and Air Conditioning Exhibition in Chicago next week will no doubt come prepared to place unusually substantial orders for every type of equipment they are reasonably sure can be marketed in 1941.

Those who can't make the Exhibition will be sharpening their pencils and figuring on their first-half-of-the-year requirements, so that they can place their orders by mail.

THREE BIG REASONS FOR LAYING IN STOCKS

Reason No. 1: The biggest business boom in America's history is in the making. Retail sales are already hitting all-time peaks in many localities, and the "sky" in this case is unpredictable, because of the millions of workers whose income will rocket during 1941.

Reason No. 2: A good many people are beginning to worry about what priorities may do to normal production, and are scurrying to lay up stocks against a time when deliveries may get far behind schedule.

Reason No. 3: Placing heavy orders now at current prices is an excellent hedge against inflation which —despite what you read in the papers —is a strong possibility.

GREATEST INDUSTRIAL PRODUCTION IN ALL HISTORY TICKETED FOR 1941

When the big new defense plants now a-building get into production during the spring and summer of 1941, American business will experience an activity greater than anything the world has ever known before.

Already the Federal Reserve Board's industrial production index has reached the record-shattering figure of 135 (December, 1940). This compares with the previous high of 110, achieved in 1929!

Employment stands currently at 112—six points above 1929. Payrolls are at 116—also six points above 1929. Both will jump considerably in the months ahead.

Retail sales set new records during the Christmas season. They are still setting records. The cost of living is figured at 15% under that of 1929. All the factors for a boom are present. In fact, the boom is on.

EXPECT LITTLE INTERFERENCE FROM CRACKPOT 'REFORMS'

One of the most encouraging features of the outlook is that the defense program is turning the tide away from reform, economic tinkering, experiments in business baiting, and the so-called "class warfare."

It is now realized that business and industry, mass production, and good management, are the protectors of our heritage of freedom—instead of being "tyrants of capitalistic oppression."

NATION IS PREPARING TO FIGHT TOTALITARIANISM, INSTEAD OF EMBRACING IT

Instead of hailing the totalitarian states and their way of life as superior to our own, we are preparing to fight them.

War and the preparation for war are hateful, wasteful, uneconomic things. But if they result in national unity, in healing the breach between the "classes" (which never really existed before), in dramatizing the worthwhileness of the democratic way of living, in assessing true values in our national life, then we may give thanks.

INVENTION AND INDUSTRIAL PROGRESS SHOULD BE ENORMOUSLY ACCELERATED

Stimulation of industry, which always attends the feverish preparation for war, may also result in an acceleration of the rate of invention and industrial progress. Thus when the war is over, there may be a flock of new industries all ready to carry the ball.

Business is now entering into a seller's market. And the most important thing the individual business man can do right now to get ready for that seller's market is to have plenty of goods "on hand and on order" to sell.

LETTERS

HOW THINGS ARE GOING IN WAR-SURROUNDED SWITZERLAND

Office for Industrial Information
5 rue du Rhone, Geneva, Switzerland

Editor:

Your letter of July 23 has been duly received at the time and we thank you for publishing our editorial note in your publication. We should have liked to receive two voucher copies of the respective issue.

As to the effect war is having on business in our country, we may say as a whole that the situation of Switzerland is not too bad and could be worse, considering the deplorable conditions in various other countries.

As you are aware of, Switzerland is completely surrounded by Germany, Italy, and France, nations where the war is raging. We are entirely depending from them as to all our communications with abroad. Or, England as well as Germany have established the blockade and as a result Switzerland is experiencing great difficulties to maintain the contact with foreign customers. You know that our country is an industrial and commercial nation and only in the second place an agricultural one. We depend from imports and exports, they are the basis of our economical structure.

At present the problem of the imports of raw materials, such as metals, food, and others, is rather serious. England recently agreed to release certain ships with goods for Switzerland, fact which is appreciated here. But another problem is the transport from the seaport to our frontier. It is said that big stocks of goods for our country are lying in Lisbon; owing to the disorganization of the railway system in France they could not yet be transported to Switzerland.

Exports are subject to transit certificates from our neighbouring countries which very much delays deliveries or makes them impossible owing to the blockade. There is again the transport problem.

Switzerland has a highly developed machine, watchmaking, and textile industry, three main pillars of our economical structure, but they are all based on the import and export business. Many companies are working for the rearmament of our country and they are, of course, better placed. Other trades are severely stricken by present conditions, such as the whole automobile trade, owing to the penury of benzine, or the textile and watchmaking industries, connected with the markets all over the world.

Unemployment is but a small problem at present, if we only look at the official figures showing a total of about 12,000. But it must be taken into account that our army is partially mobilized which is, besides, a good means to reduce unemployment. As a matter of fact, the problem of unemployment is not solved but temporarily.

For the present, there have been necessary certain restrictions as to the consumption of foods, benzine, coal, etc., and other regulations, but, under the present circumstances, the situation may be called satisfactory.

We trust this summary will allow you to get a picture about conditions in Switzerland.

HUGO BUCHSER,
Manager

P.S. We are sending you by printed matter the September issue of "La Vie Economique" wherein you may find some useful precisions about certain lines of activities.

DAN WILE TELLS WHAT HAPPENS WHEN BOTTLED DRINKS FREEZE UPON OPENING

Savage Arms Corp.
Refrigeration Div.
Utica, N. Y.

Dear George:

In the Dec. 11 issue of the NEWS, on page 14, there is an explanation of why Coco Cola sometimes freezes the moment the bottle is opened. I have observed this condition with various carbonated beverages, and always attributed it to a somewhat different explanation.

Under suitable conditions, most liquids can be cooled considerably below their freezing point before crystallization takes place. This phenomena is called supercooling.

In the case of water, for instance, the United States Bureau of Standards (RP 1105, June, 1938) has carried the temperature down to 6° below zero F. before freezing took place.

Just for your own interest, set a tumbler of water with a thermometer in it outside your window on a very cold day and observe how low the temperature goes before freezing takes place.

If the water happens to be quite pure and is covered so that no dust particles settle in it, and furthermore, if your location is quite free from vibration you will probably be very surprised at the results.

After the temperature has dropped down to perhaps 20° F. or lower, shake the glass or stir the thermometer. This agitation of the water should start the freezing process and immediately you will observe that the temperature of the water rises to 32°.

Off hand, it would appear that the amount of refrigeration available from the release of the carbon dioxide pressure would be practically nil. To produce an appreciable amount of refrigeration considerably more gas would be required than could ordinarily be charged into a bottle of this type.

Then, too, if you have ever opened a bottle of warm ginger ale you will recall that the mere process of relieving the pressure produced no appreciable amount of cooling.

Back some years ago in Detroit, some of the boys from Detroit Lubricator Co. were over at Keith Symond's house for a little game, and we ran short on cold bottles of a certain carbonated beverage. Since it was winter, and the temperature was very cold outside, we set some bottles of this carbonated beverage outside the window to cool them quickly.

Later, when these bottles were taken in they showed no signs of freezing. When, however, the tops were removed and pressure released, a considerable quantity of ice immediately formed.

The question came up at that time as to what was causing this spectacular occurrence, and to prove that it was not caused directly by the release of pressure, we shook one of the bottles before opening it and observed the same freezing phenomena.

From the foregoing it would appear to me that the condition observed by your correspondent W. J. D. was due to the liquid in the bottle having been cooled below its freezing point and having remained in an unfrozen or supercooled condition simply because it had not been agitated.

Opening the bottle and the consequent release of pressure agitated the liquid and started the freezing process. At that moment, the liquid temperature increased to the freezing point and the heat necessary to effect this increase was absorbed from that portion of the liquid which was converted into ice.

Best regards to you and the gang. We hope that Mr. Jordan won't take offense at our difference of opinion. It certainly was a pleasure to see you and Willo in New York—especially Willo.

D. D. WILE,
Chief Engineer

SANDY PRATT AND HIS FAMOUS BABY REDWOODS

California Refrigerator Co.
1077 Mission St., San Francisco, Calif.

Dear George:

In reply to yours of the 11th, regarding the baby redwood tree, the thing to do is to build a framework around it at least two feet in diameter, and for the outside walls use several thicknesses of burlap and fill the inside with straw, hay, or excelsior. Then pray every day that your baby tree will be alive next spring.

Plan No. 2 is to move your publication and plant to California, together with your baby tree, where we have sunshine, flowers, honey, and beautiful women the year around.

We are planning on bringing a big crowd from California to the Convention, and we will be happy to see all of our dear friends on the NEWS; and by the way, George, I would like to meet Mrs. Taubeneck, and the California delegation requests that we have the pleasure of meeting her there.

Business is good and we expect this preparedness program to keep us busy all winter.

Kindest regards from everybody in the California Refrigerator Co.

SANDY PRATT, President

They'll Do It Every Time . . . . . By Jimmie Hatlo

HA-HA-HA-HA! THEN THE FARMER SAID TO THE TRAVELING SALESMAN— HA-HA-HA- HE SAID— HA-HA-HA-
OH-HO-HO-HO! THAT'S A PIP HERMAN, THAT REMINDS ME OF THE ONE ABOUT THE BABIES THAT GOT MIXED UP IN THE HOSPITAL. IT SEEMS THERE WAS THREE BABIES—
REMIND YOURSELF THAT I'M OUT 40 BUCKS AND THERE'S ONLY AN HOUR LEFT TO PLAY, WILL YOU?
COME ON! COME ON! DEAL THE CARDS.
FUNNY AS A GAS MASK. THEY'VE GOT THE BALL AND ARE HANGING ONTO IT TILL THE WHISTLE BLOWS.
I KNOW 'EM. THEY'LL CALL FOR A ROUND OF BEERS AND SANDWICHES NEXT.
WATCHING THE HEAVY WINNERS STALL OUT THE LAST LAP OF THE POKER GAME —
THANX TO TOM TANNER CHATTANOOGA, TENNESSEE
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RESPONSIBILITY...

Behind the A-P Reputation for DEPENDABILITY lies a story rarely duplicated in the history of industry. The story of an enterprise founded on *one* dramatic promise . . . the promise of DEPENDABLE Products built to a rigid standard that has governed every thought in the years since its first appearance.

Proof that this promise is being fulfilled to the exacting specifications of thousands of Refrigeration Engineers is demonstrated by their use of DEPENDABLE A-P Refrigerant Controls on Millions of Dollars of Equipment.

★ Progressive Service Engineers use and recommend . . . and Aggressive Jobbers stock and talk . . . Products . . .

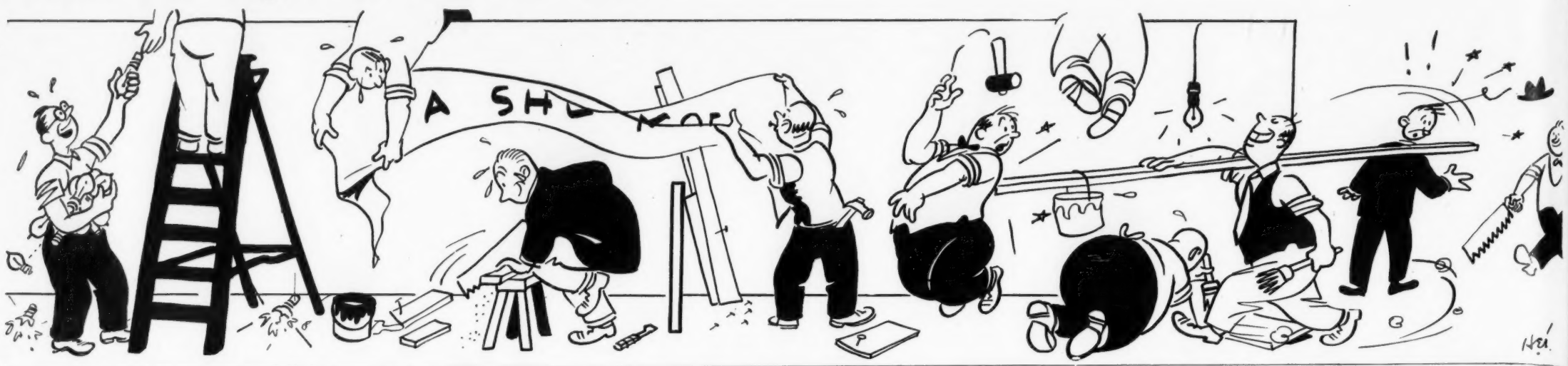
AUTOMATIC PRODUCTS COMPANY

2450 NORTH THIRTY — SECOND STREET

MILWAUKEE WISCONSIN

Export Department 100 Varick Street, New York City

'Twas the Night Before the Show — —



Personalities at the Show

Bill Keefe

Genial is the word for Bill Keefe. He has been one of the best-liked men in the refrigeration industry longer than almost anyone can remember. Almost two decades he has spent in this business, and some of his friendships in the industry will date almost that far back.

His first job was that of assistant to the salesmanager of the Fedders Automotive Radiator Division; but when Fedders instituted an Electric Refrigeration Division, Bill took over. He has been General Sales Manager of the Refrigeration Division of the Fedders Mfg. Co. in Buffalo since that time.

He'll tackle any kind of a task, and do a good job of it. At the Fall Rema meeting, he was chosen to be master of ceremonies for an "Information Please" program among the executives, and did the job in a fashion that pleased everyone.

As an important member of the Fedders Steering Committee, Bill plays a leading role in the development of new ideas and new products, as well as the improvement of present lines.

Anyone who is acquainted with his friendly ease of manner, his jovial disposition, and his beaming countenance (which starts with his chin and extends a long way back) could guess that Bill is a great family man. He is. What's more, his four kiddos have an 80-acre farm to enjoy. Bill enjoys it, too.

Speaking of families, Bill has a standing invitation to visit the editor in Detroit, and enjoy some cinnamon toast **par excellence.**

* * *

Guy Henry

When Guy Henry, president of Henry Valve Co., gets interested in something, he really concentrates. A hard working but genial executive, he can "lose himself" in the matter of the moment that has his attention, with the result that he gets things done—and does them well.

He applies those same powers of concentration to his outside interests —sometimes with an unusual result, like the case recently in which his obliviousness to all but the matter at hand found him forced to turn hitch-hiker.

In building a new home at Arlington Heights, a suburb northwest of Chicago, Guy became so interested and enthusiastic that he didn't even notice the change in the seasons, with the result that he failed to put any anti-freeze in the radiator of his car. Came a cold spell—and he had to thumb his way into Arlington Heights to catch a train into the city.

Incidentally, he has installed a billiard table in his recreation room, which is supposed to be for the benefit of his son, Bob. But when he says this, his intimates grin grimly, and issue a warning that if you're going to play some billiards or pool with him, leave your spare change in your pocket. He has been a wizard with a cue since his youth.

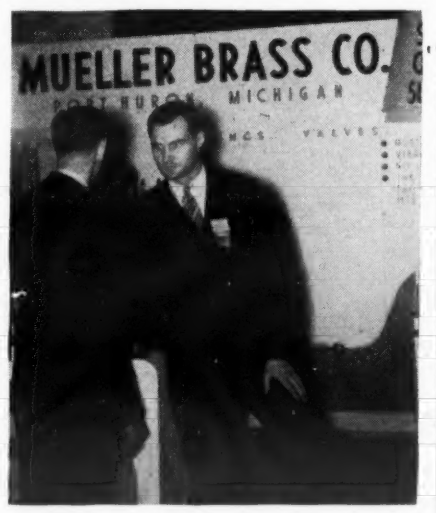
* * *

Fred L. Riggin, Jr.

In many cases where a young man gets a pretty big job, he may find it a long, hard row to get himself liked by the other members of the trade.

The exact opposite is the case of Fred L. Riggin, Jr., manager of the refrigeration division of Mueller Brass Co., which is headed by his father.

Friendly, modest, and well-mannered, he is universally liked. He applies himself diligently to his job,



FRED RIGGIN, JR.—Wedding Bells?

and while he doesn't pop up at every opportunity to display his knowledge, when he is called upon to speak at meetings he displays a well-rounded knowledge of his own particular business, and of industry conditions in general.

Golf has been his prime hobby, and he might well be one of the ranking amateurs in the country if he could perfect his putting. He'll listen to anyone who can advance some ideas on putting—or who may know of a new kind of a "magic putter."

And to do a little keyhole reporting, we understand that Fred is to leave the ranks of the bachelors, not so long after the All-Industry Show.

* * *

Matt Oberholzer

Matt Oberholzer of the L. H. Gilmer Co. has achieved the goal for which every sales manager yearns. He is entering his third year as general sales manager of the V-belt manufacturing concern; and for four years previous to taking that job he was manager of the refrigeration belts division. And in each of these six years the division which he has headed has shown an increase over previous years.

The industry has given him further recognition of his aggressive sales-mindedness by making his chairman of the membership committee of the Refrigeration Equipment Manufacturers Association. He has been a leader in Rema activities ever since the association was formed.

Perhaps some of the enthusiasm that has made him successful as a

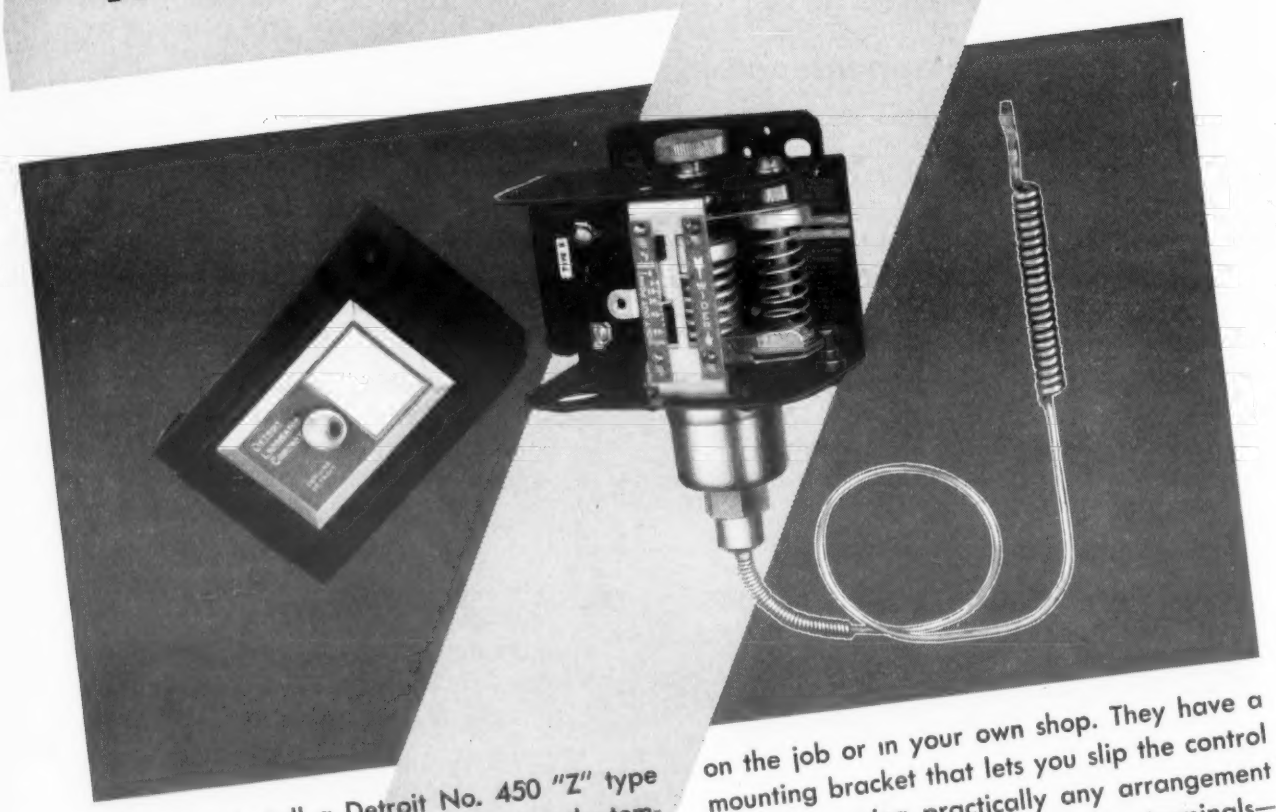
MATT OBERHOLZER — Plenty To Cheer About.

sales manager was generated out of the days when he was leading the cheering for the Villanova College football team. Today he is still a rabid follower of Villanova's team.

Known as a swell story teller, with a flair for really embellishing a tale, some of his best stories are on himself.

New #450 "Z" CONTROLS

CHANGE TEMPERATURES WITH YOUR FINGER-TIPS



When you install a Detroit No. 450 "Z" type Control you or your customer can select the temperature you want in a jiffy. Just turn the large knob on top of the control and read your setting on the scale through the cover window.

The coiled tubing type bulb makes these controls respond quickly to temperature changes. Like all Detroit No. 450's they are husky—built to take it. The sturdy parts are interchangeable on the job or in your own shop. They have a mounting bracket that lets you slip the control into place using practically any arrangement of mounting holes. Large wiring terminals—easy to get at.

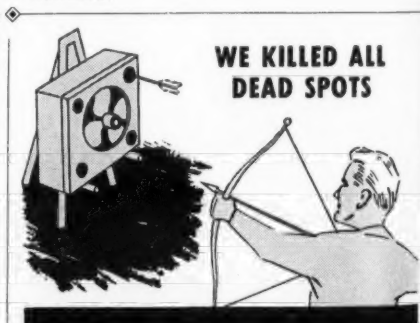
Use these No. 450's just once and you'll be asking your wholesaler for Detroit Valves AND Controls.

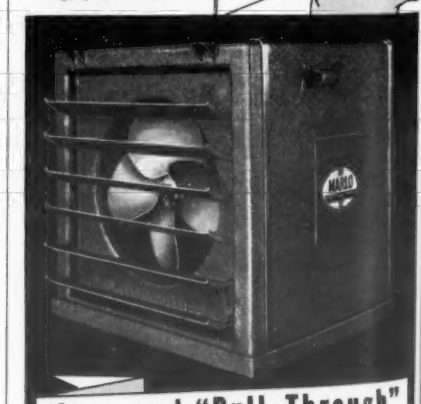
SEE DETROIT LUBRICATOR BOOTH AT THE THIRD ALL INDUSTRY EXHIBITION—CHICAGO

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg





Improved "Pull-Through" Design . .

The Outstanding Feature of the New Model 1941

MARLO UNIT COOLER

The full coil surface is evenly effective. No more dead spots—"Pull-Through" does it!

All aluminum construction — Cast End-Frames.

Full range of sizes.

Venturi Fan Ring—Quiet Operation.

Suitable for comfort cooling applications.

See it at the Show, in January.

MARLO COIL COMPANY

6135 Manchester Avenue, St. Louis, Mo.

Refrigerating Equipment Manufacturers

Personalities at the Show

Jim Hood

When you see Jim Hood (who is a dead ringer for Tommy Dorsey, the band leader) you'll hardly believe that he, too, is an Old Timer in this comparatively young refrigeration industry.

Yet Jim got his start with the old Zerozone Co. in Chicago; and Zerozone Co., you people who just came in, was past history before most concerns now in the industry were aware that refrigeration was becoming important.

From Zerozone Jim went West to manage the western branch of Ansul Chemical Co. of Marinette, Wis. Jim is now Secretary-Treasurer of Ansul, and has headquarters at Marinette. You're liable to see him, however, anywhere.

Among the industry's air-minded executives, Jim easily lands in the front row. He has already passed the 100,000-mile mark, and is still going.

A top flight golfer, he is also a crack bowler and a real sailor.

CHARLIE GARY (left)—"Things were pretty grim."
JIM HOOD (right) — Young old-timer.

* * *

Charlie Gary

Some of the other men at the Henry Valve Co. have a game which they play when Sales Manager Charlie Gary is in town—getting Charlie out of the plant at some reasonable hour.

For Charlie likes to work late, and often 2 a.m. may be his checking-out time. About the only sure methods that have been found for getting him on his way home is to have the heat turned off at a certain time, or to have a fuse blow out. (That 2 a.m. training, Charlie, will put you in good stead if you ever want to get into the publishing business.)

In his younger days Charlie was a sailor, and can tell you some things about the ports of the world. Today he still gets his fill of travel, ranging all over the country in the interests of the Henry Valve Co. Perhaps that's why he puts in so much night work—trying to catch up.

Charlie is good company—friendly, generous, and with a knack for an original way of saying things.

A couple of years ago Charlie was in a plane crackup out west, near Salt Lake City, we believe. Although bruised and battered up a bit, he took the next plane for his destination. His reaction to the affair, when questioned about it later, was characteristic:

"For a moment," said Charlie in describing the accident, "things looked pretty grim."

* * *

Les Blough

When you start talking about production for defense, Les Blough can speak with authority. For during the World War he was Order of Work Chief and Assistant Production Manager of the Naval Aircraft factory, Navy Yard, Philadelphia.

And in 1920-21, he was an industrial engineer with the Bethlehem Shipbuilding Co., Wilmington, Del., and Bethlehem, Pa.

What he can tell you about the frenzied production of those days will curl your hair.

Ever since boyhood Les has been interested in airplanes and air travel. When he was 21 years old he collaborated with a French flier in building an early model plane. He has also enjoyed model airplane building as a hobby.

* * *

Jim Rodgers

Jim Rodgers of White-Rodgers finds his greatest pleasure in "making things work better." It is said of him that he is the boy who not only took the alarm clock apart, but who put it together again and made it work.

True, he enjoys golf, automobile trips, contract bridge, and Boy Scout work. He was also one of the first "ham" radio amateur operators in the St. Louis area, and held one of the highest ratings in the section.

But these interests become trivial in comparison with his overweening desire to take things apart and put them back together again so that they will work better than they did before he got his hands on them.

Before helping to start White-Rodgers Co. he spent many years in the motor industry. Among his contributions to the motor industry are:

Special system of field winding and connections on two-speed motor for special application; slotted shaft which eliminated "fan bounce"—a development which affected the entire motor industry; more efficient, faster type of testing equipment for iron and steel analysis; resilient mounting designed to insure rigidity of motor shaft.

* * *

Bob LeBaron

We have a few members of the industry whose hobby is music, but Bob LeBaron of Virginia Smelting Co. can lay claim to being the only composer of record who earns his living by selling refrigerants.

Offhand we don't know whether Bob is ASCAP or BMI, but we'll wager a hot trumpet lick that he is following avidly this jurisdictional battle between the rival composers' unions. (With the need for new tunes, maybe Bob should cash in on his hobby.)

BOB LeBARON (and wife)—Businessman Beethoven.

He spent many years studying music and composition, and for a time was musical director of one of the better-known broadcasting companies in New York City.

Bob is a graduate of Union College, Princeton Graduate School, the Sorbonne (Paris), and the United States Army. He served overseas as a lieutenant.

Before joining the Virginia Smelting Co. in 1936 as Director of Sales, he was with Arthur D. Little, Inc., and the Petroleum Chemical Corp., of which he was vice president.

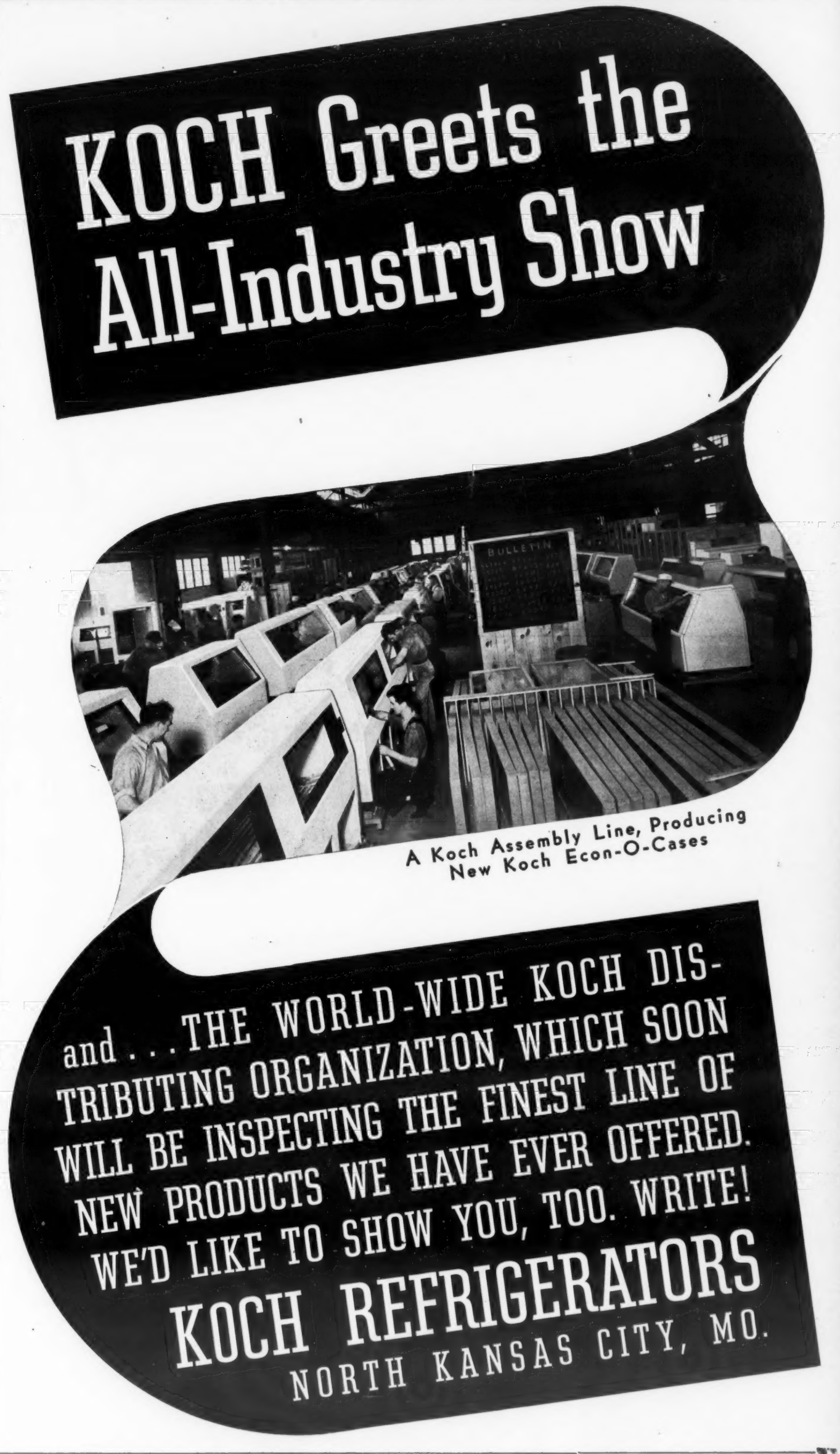
For relaxation from either business or music, he turns to swimming; and his summer office is said to be beautiful Virginia Beach.

Tom Davis

That eminent gentleman, scholar, and judge of fine hams, "human" as well as culinary, Tom Davis of Dayton Rubber Mfg. Co., was graduated from Virginia Military Institute with high honors.

We never did get the story entirely straight, but from time to time we have heard various well-embroidered tales of the "Bombing of V.M.I.," a pre-Hitler raid on that classic campus engineered concurrently and, no doubt, coincidentally, with Tom's heyday down there. (Those who read the story on V.M.I. in the Saturday Evening Post will recall the incident.)

A vial of acid, a saucer, an alarm clock, and a homemade cannon comprised the arsenal for this bombing raid. The results were most 'orrid.


KOCH Greets the All-Industry Show
A Koch Assembly Line, Producing New Koch Econ-O-Cases
and . . . THE WORLD-WIDE KOCH DISTRIBUTING ORGANIZATION, WHICH SOON WILL BE INSPECTING THE FINEST LINE OF NEW PRODUCTS WE HAVE EVER OFFERED. WE'D LIKE TO SHOW YOU, TOO. WRITE!
KOCH REFRIGERATORS
NORTH KANSAS CITY, MO.

For Your Convenience and Profit!
✓ marks the Spot ★ ★ ★ ★
where you can get PROMPT DELIVERY from stocks
DU PONT Artic The Preferred METHYL CHLORIDE for Service Work
DU PONT E. I. DU PONT DE NEMOURS & COMPANY (INC.) • The R. & H. Chemicals Department • Wilmington, Delaware
District Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

WATCH THE WATCH

Watch for announcement of the most spectacular line of refrigerators and electric ranges ever offered to the buying public. Now being introduced to Frigidaire Dealers in factory-conducted meetings

REFRIGERATORS

1. Brilliant New Beauty! A world-famous designer creates for Frigidaire completely new [redacted] refrigerator as a beauty note in your kitchen.

2. More Useful Than Ever! New [redacted] compartments—bigger and roomier! New [redacted] up to [redacted] bigger! [redacted] adjustable to suit your needs. Even the [redacted] model selling for only [redacted] is fully-fitted, including [redacted] and [redacted]!

3. Use Less Current! The [redacted] 1941 Frigidaires have [redacted] power to keep food better and freeze ice faster! Yet they cost less to operate than [redacted].

4. Sensational New Values! Choose from [redacted] brilliant models—every one a [redacted] priced [redacted]. [redacted] Cold-Wall prices are [redacted] as $[redacted] . . . [redacted] Standard models [redacted]! The [redacted] a genuine Frigidaire "Six," SELLS FOR ONLY . . . $[redacted].

The same *Leadership in Action* that sold over 6

FAVORITE — Frigidaire!

from coast to coast. Brilliant new models, new advertising and new selling plans—all strategically designed to increase further the predominant sales leadership of Frigidaire Dealers in '41!

ELECTRIC RANGES

1. Brilliant New Beauty! New concepts of range beauty, created by a world-famous designer include [redacted].

2. More Useful—Faster! Exclusive advantages assure [redacted] more care-free cooking. New [redacted] are [redacted] known!

3. Use Less Current! Lowest cooking cost in Frigidaire history. New [redacted] units [redacted] more efficient. Exclusive [redacted] save up to [redacted] on current.

4. Sensational New Values! [redacted] brilliant models. Every one an outstanding [redacted]! Prices start at only [redacted].

600,000 refrigerators in 1940 SCORES AGAIN IN '41!

'Elastic Mind' Is Need of Engineers, Says Willis H. Carrier

SYRACUSE, N. Y.—Every technical industry in this country, including air conditioning, needs men who have been "properly trained," Willis H. Carrier, chairman of the board of Carrier Corp., told members of the New York section of the American Physical Society at a recent meeting at Syracuse University.

Mr. Carrier explained that by proper training he meant men who have been educated "rather than merely superficially informed, as we find the great majority of students coming to us today.

"We want men with elastic minds, men who are not mentally 'muscle-bound,'" he said. "We need men who have a conception of the broad generalities, or the philosophy of physical science, rather than the narrow technicians."

Contending that undergraduate work in engineering should never be specialized, Mr. Carrier said that emphasis should be placed on training to develop independent thinking and good work habits, rather than toward amassing factual knowledge.

"This is equally true of the training for an engineer who is later to follow air conditioning," he said. "He needs, however, a thorough grounding in the mechanics of fluids, in thermodynamics, and heat transfer."

E. S. Wright
A.S.R.E., R.S.E.S.

Service Forum

This is one in a series of articles aimed to give the refrigeration service engineer some useful suggestions and descriptions of various service methods that can be used both in the shop and in the field.

By E. S. Wright

4 Ways to Make Use of Heat Exchanger

Frequently it is desirable and sometimes necessary to make use of heat exchanger apparatus in the refrigeration system, such as:

(1) Water-cooled condenser consisting of a tube within a tube as an emergency condenser, to help out an overloaded air-cooled compressor or replace a broken water condenser while a new one is being shipped from the factory or the old one is undergoing repair.

(2) Refrigerant removal. Sometimes it is necessary to discharge some large jobs, and if no pump is handy an expansion valve coupled with a small compressor will permit removal of gas in a hurry into large drums.

(3) As a heat exchanger for increasing the overall efficiency of the system by using suction line temperature to further reduce temperature of liquid line just ahead of expansion valve, and get more active coil surface by expanding slightly past the thermostatic expansion valve bulb, especially in low temperature work.

(4) For a water or beverage cooler, an automatic or thermostatic expansion valve connected to one end and a back pressure valve on the other will permit a good unit to be constructed. This can be rolled into a fairly small coil. If beverages are to be cooled which are carbonated, a hot dipped tinned tube must be used. The outer must be tinned on the inside and the inner tube on the outside. The tinning must be uniform and some tubing companies cannot furnish it, so inquiry must be made of them in this regard.

(A description of how to make a simple heat exchanger tee which permits use of the heat exchanger in a number of different operations was described in the NEWS of Nov. 27.)

As an example of the first recommendation: Sometime ago we received a call from one of the large super-markets and upon arrival found the entire gas charge gone and the system full of water due to a broken water coil in the shell and coil condenser caused by a chattering water valve.

There being no opportunity to put this job down for a long period, we took 50 feet of ⅝ and 50 feet of ⅜ tubing and made a water-cooled condenser, which operated temporarily until we obtained a new shell and coil condenser from factory. We blew job completely with CO_2, washed with carbon tet, and installed dryers. This was a 1½-ton job on cooler and cases.

In the second instance we had a large apartment which the owner desired to change over to "Freon" from sulphur dioxide. The pump down receiver capacity was not sufficient to hold the entire charge.

To accomplish quick removal we used some large drums and hooked a heat exchanger with a small compressor between the receiver and drums to be charged. By running the large compressor on the job, we pumped down the entire system and ran refrigerant into storage drums faster than we could have accomplished in any other way and without any loss into atmosphere.

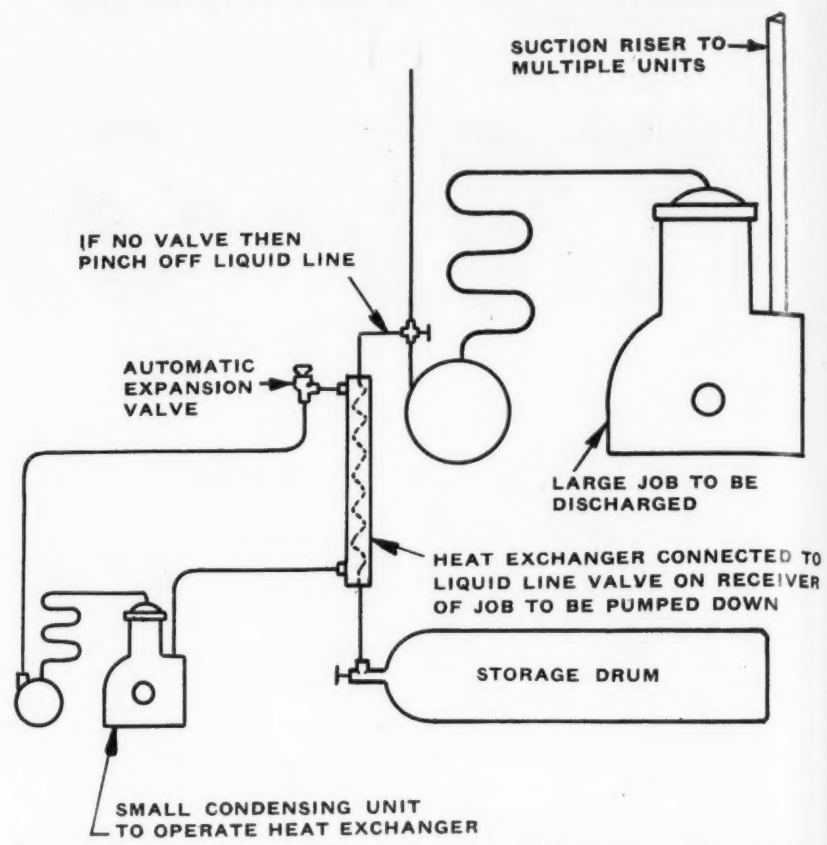
In the third instance we have increased the overall efficiency and reduced power consumption by 14% through the use of heat interchangers placed as close to the coil outlet as possible.

Heat exchanger tees are obtainable from most fitting manufacturers but require soldering or brazing and when once used cannot be used again due to solder or brazing material adhering to them.

In forming a heat exchanger not less than 5 or more than 12 feet is necessary for use at the coil outlet. These are for small commercial jobs. On larger sizes it is more economical to purchase a factory-built unit. A 50-ft. heat exchanger coil will suffice up to a 3-hp. condensing unit when used as a condenser, by increasing water flow.

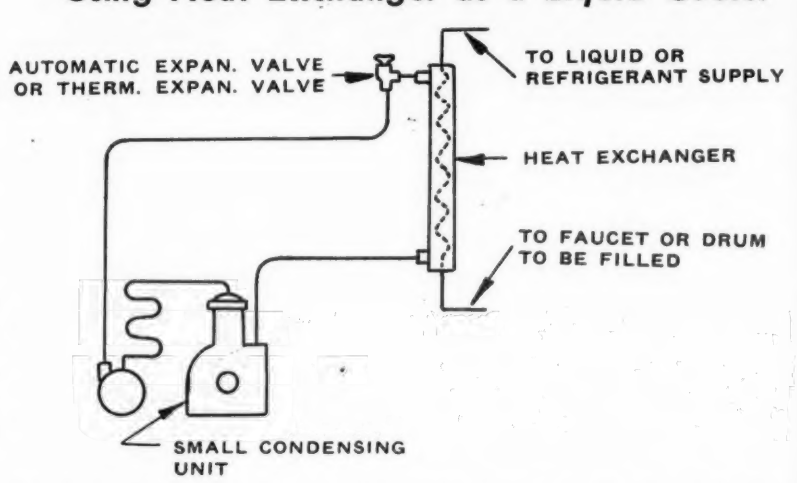
As a refrigerant transfer device, 12 feet is sufficient and the same applies to its use as a water or liquid cooler.

Removing Refrigerant From Large System

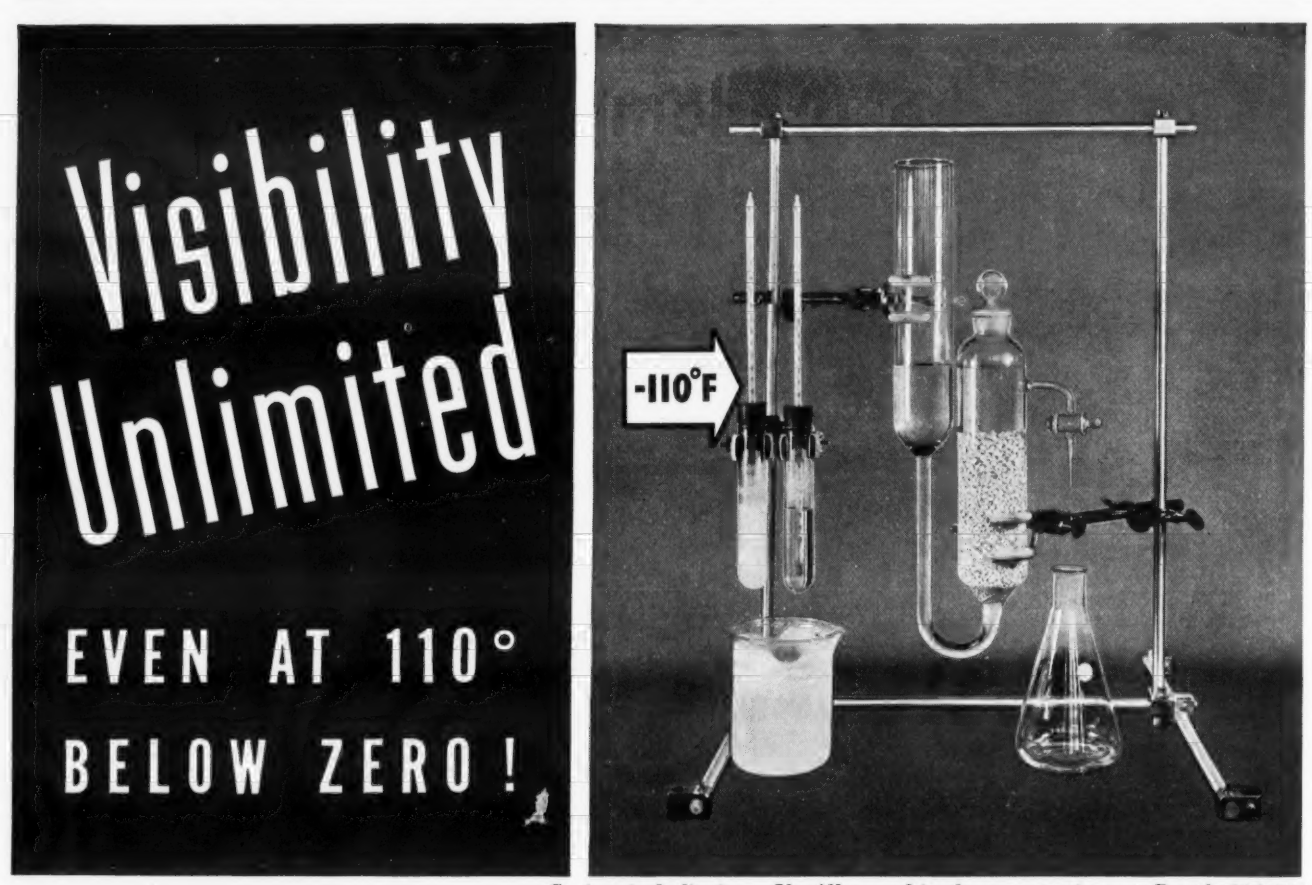

SUCTION RISER TO MULTIPLE UNITS
IF NO VALVE THEN PINCH OFF LIQUID LINE
AUTOMATIC EXPANSION VALVE
LARGE JOB TO BE DISCHARGED
HEAT EXCHANGER CONNECTED TO LIQUID LINE VALVE ON RECEIVER OF JOB TO BE PUMPED DOWN
STORAGE DRUM
SMALL CONDENSING UNIT TO OPERATE HEAT EXCHANGER

In cases where a large system is to be discharged, or the receiver capacity isn't great enough to handle the complete discharge, the heat exchanger and a smaller compressor can be hooked up to do the job without loss of refrigerant.

Using Heat Exchanger as a Liquid Cooler


AUTOMATIC EXPAN. VALVE OR THERM. EXPAN. VALVE
TO LIQUID OR REFRIGERANT SUPPLY
HEAT EXCHANGER
TO FAUCET OR DRUM TO BE FILLED
SMALL CONDENSING UNIT

As a liquid cooler or a refrigerant transfer device, this is the recommended hookup for a heat exchanger.



Seeing is believing. You'll see this demonstration at Booth 326-327 at the Refrigeration Show, Stevens Hotel, Chicago, January 13 to 16.

At 110° below zero, the merest *trace* of water in refrigerants becomes noticeable, producing cloudiness and icy slush in the liquid. Refrigerants dried with Alorco Activated Alumina remain crystal-clear and fluid at −110° F., for the water is all gone—every last troublesome molecule of it. Acidity is gone, too!

Above, clamped to the left end of the laboratory apparatus used to dry carrene with Activated Alumina, are two test-tubes just lifted from the beaker of dry ice—temperature: −110°F. The left-hand tube contains carrene, moisture and acid; sample is cloudy and icy. To its right is a tube of this same liquid after being passed through the bed of Activated Alumina; sample is clear and fluid, because the Activated Alumina has soaked up every trace of water and acid.

And Activated Alumina doesn't confine its activities solely to removing water and acid. It also regenerates lubricating oil, thus preventing corrosion and reducing wear. Activated Alumina is your silent partner in getting rid of troublesome moisture, acid and sludge in the refrigerator lines you service.

Ask your supply house for refrigerator cartridges charged with Alorco Activated Alumina. ALUMINUM COMPANY OF AMERICA (*Sales Agent* for ALUMINUM ORE COMPANY) 1908 Gulf Building, Pittsburgh, Pennsylvania.

These manufacturers supply dehydrators charged with Activated Alumina

American Injector Company
Fedders Manufacturing Company
Henry Valve Company
Imperial Brass Manufacturing Co.
Kerotest Manufacturing Company
McIntire Connector Company
Mueller Brass Company
Cyrus Shank Company
Universal Cooler Company

★ ALORCO ★
ACTIVATED ALUMINA
DRIES REFRIGERANTS DRY
ALORCO

BOOTH No. 124
SUPERIOR
VALVE & FITTINGS CO.

BOY! IT'S NEW! IT'S UNIQUE! YOU'VE NEVER SEEN ANYTHING LIKE IT! SEE IT IN ACTION AT THE CHICAGO SHOW!
SUPERIOR VALVE & FITTINGS CO. - PITTSBURGH, PA.

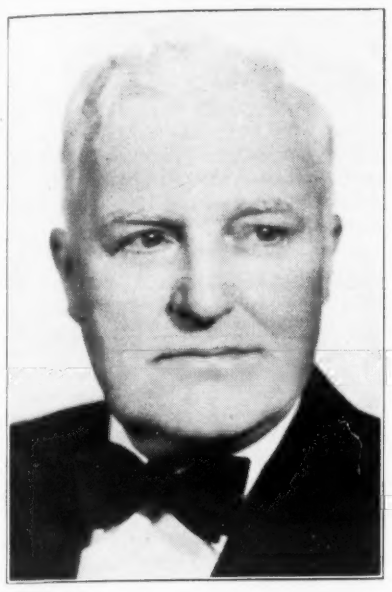
Jobbers To Discuss Their Functions, Costs, and Territorial Coverage

Speakers Will Include Hubbell, Allen, Merkel, Hovey, Iber, and Taubeneck

(Concluded from Page 1, Column 2)

ber in a Rapidly Changing World." Frank S. Langsenkamp, Jr., F. S. Langsenkamp Co., Indianapolis jobbing firm, president of the N.R.S.J.A., and Earl A. Vallee, vice president, Automatic Products Co. and president, Refrigeration Equipment Manufacturers Association, will also speak.

A full day's session is planned for Tuesday. In the morning session there will be reports by the president,



FRED B. HOVEY, executive secretary of the N.R.S.J.A., who was largely responsible for planning the association's program.

treasurer, and executive secretary. Then Howard H. Hubbell, Brass & Copper Sales Co., St. Louis, will talk on "Cost Analysis," giving the group the benefit of the information he has gathered on this subject, as well as his own experience.

"The Place of the Refrigeration Supply Jobber in the Air Conditioning Industry," will be the first topic of the Tuesday afternoon session,

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Fred B. Hovey, executive secretary, National Refrigeration Supply Jobbers Association, urges all who plan to attend the General Luncheon of the Refrigeration Equipment and Supplies Trade, to be held Monday noon (12:15) in the Grand Ballroom of the Stevens hotel, to make reservations through him as quickly as possible, as commitments must be made to the hotel on the number to be served.

This luncheon will be open to all manufacturers and jobbers of refrigeration equipment and supplies, whether they are members of any association or not, and will be the only such meeting held during the Show.

---

with William C. Allen, vice president, Modern Equipment Corp., the speaker. Known from past repute as a man who always puts forth constructive ideas in his talks, Mr. Allen's remarks are awaited with interest by the jobbers.

A project which has gained the interest of Henry W. Merkel, The Merkel Bros. Co., Cincinnati, and a past president of the N.R.S.J.A., is the preparation of a map showing accurately and graphically the territorial coverage of jobbers of refrigeration equipment and supplies.

Both manufacturers and jobbers feel that this is desirable mainly from the standpoint of finding out the territories are adequately covered, and in which the establishment of further jobbing operations might result in unprofitable operations for all. However, to portray graphically the coverage of the whole United States by jobbers is a project that requires considerable planning, unless expense was no consideration.

Mr. Merkel will discuss this subject at the Tuesday afternoon session, and will ask for suggestions from other members.

"Projects to be Undertaken by the Association," will be the final topic of this afternoon meeting, with Fred B. Hovey, executive secretary, the speaker.

At the Wednesday morning session there will be reports of the resolutions committee, finance committee, and manufacturers relations committee. A talk on "The Distributor's Small Order Loss Problem" will be made by Oscar Iber, well-known Chicago businessman. The nominating committee will then make its report.

The joint luncheon on Wednesday of members of the N.R.S.J.A. and Rema will close the convention.

Complete program is as follows:

January 12

—10:00 a.m. Directors Meeting.

January 13

—Opening meeting of all manufacturers and jobbers of refrigeration equipment and supplies. Opens at 12:15 p.m. with luncheon program finished at 2:00 p.m.
—Address by President Frank S. Langsenkamp, Jr., and Earl A. Vallee, president of R.E.M.A.
—"The Place of the Jobber in a Rapidly Changing World," George F. Taubeneck, editor, AIR CONDITIONING & REFRIGERATION NEWS.

January 14

—General meeting 9:00 a.m.
—Convention called to order by president.
—Minutes of previous meeting.
—Introduction of new members.
—President's address.
—Executive secretary's report.
—Treasurer's report.
—"Cost Analysis," Howard H. Hubbell. Discussion by G. P. Ellis.
—Lunch at noon.
—"The Place of the Refrigeration Supply Jobber in the Air Conditioning Industry," W. C. Allen.
—"Territorial Coverage of Jobbers," Henry W. Merkel.
—"Projects to be Undertaken by the Association," Fred B. Hovey.
—Reports of committees.

January 15

—General meeting 9:00 a.m.
—Report of Resolutions Committee.
—Report of Finance Committee.
—Report of Manufacturers Relations Committee.
—"The Distributor's Small Order Loss Problem," Oscar Iber.
—Report of Nominating Committee.
—Joint luncheon of members of N.R.S.J.A. and R.E.M.A.

St. Paul Jobber Sets Own Show Schedule

ST. PAUL—Thermal Co., St. Paul refrigeration and air conditioning supplies jobber, is arranging a schedule of appointments with manufacturers during the All-Industry Refrigeration & Air Conditioning Exhibition, for the purpose of giving firms exhibiting at the Show an opportunity to outline products which they feel the jobber concern might be interested in handling.

Present at the Show from Thermal Service will be: H. W. Small, president; W. H. Anderson, manager of the Milwaukee office; Perry Copeland, sales manager of the St. Paul office; Clarence Braaten, western territory representative; John Rosche, in charge of automatic heating sales.

All firms exhibiting at the Show have been sent a schedule of hours during the four-day meeting which will be open for appointments, and are asked to designate their first and second choices. They also have been asked to specify which Thermal men they wish to have present.

Heat Exchangers

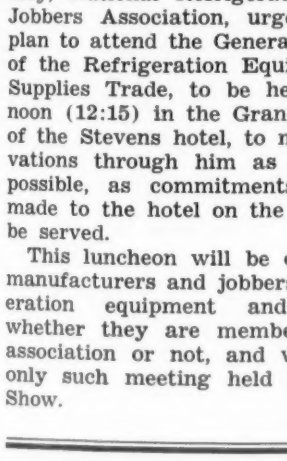
All Mueller Brass Co. Heat Exchangers are carefully designed to give maximum heating transfer efficiency with minimum restriction in the suction line.

The "IC" exchanger is a compact unit ideally suited to conditions where space is at a premium.

See our line of heat exchangers at our booths Nos. 120 and 121 at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

BIG PROFITS with A-S-E Froz-n-Food Lockers



—SURE REPEAT ORDERS

Here's a profit opportunity you can't afford to overlook—sell A-S-E Froz-n-Food UNIT Lockers. They're tops for every refrigerated locker requirement. That's why so many dealers throughout the country are finding them such a profitable source of income.

They're easy to assemble and install—require no unprofitable servicing. You can sell them for immediate food locker plant needs—make additional profits on repeat orders.

Don't wait! Now is the time—write for full information today on this sensational sales and profit opportunity.

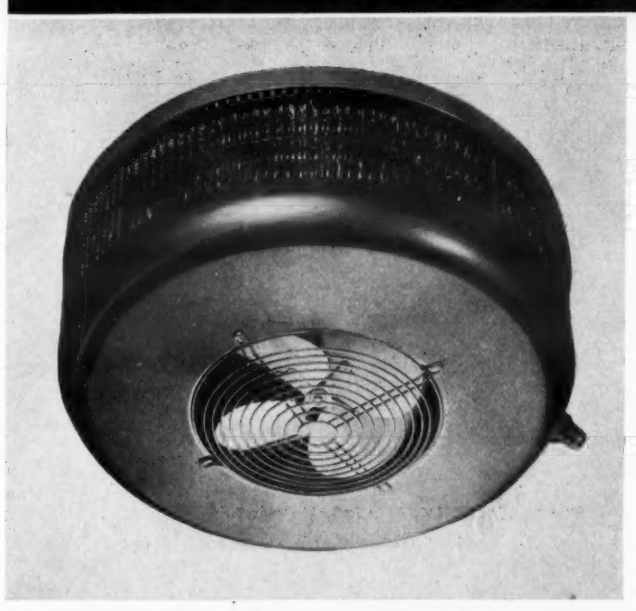
No obligation.

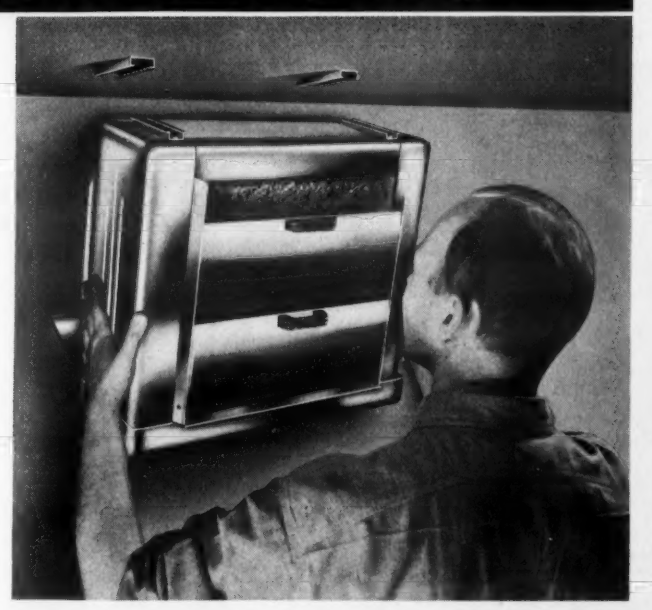
SOLD ONLY THROUGH DEALERS

ALL-STEEL-EQUIP COMPANY
Incorporated
101 KENSINGTON AVE. AURORA, ILLINOIS

THE GREATEST LINE OF REFRIGERATION PRODUCTS EVER PRESENTED BY PEERLESS

SEE THEM AT BOOTHS 102-3-4-5
at the 1941 All-Industry Refrigeration and Air Conditioning Exposition, January 13-16, Stevens Hotel, Chicago





FEATURING TWO NEW PEERLESS TRIUMPHS!

THE DOME COOLER

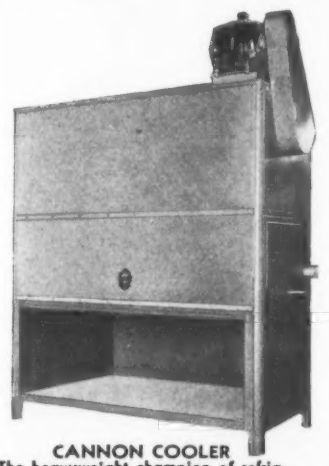
Smart and sleek as a thoroughbred! Strikingly beautiful—entirely pre-engineered for simplified installation and better over-all performance. So constructed that all parts are readily accessible. *An ultra-modern Forced Air unit with factory-installed Peerless Thermal Expansion Valve as standard equipment!*

This new Peerless Dome Cooler is the answer to those refrigeration problems where high humidity is desired . . . where products must be protected against direct air blasts . . . and where wall space is not available. Developed by consumer demand, the Dome Cooler *delivers more BTU per dollar,* yet takes up a minimum of profitable storage space.

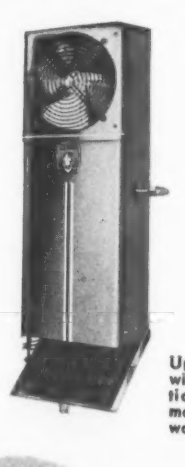
THE "ONE MAN HANGER"

Peerless here introduces an innovation so ingenious in design and so practical in application that installation time required for Peerless Unit Coolers is cut to the bone! The "One Man Hanger" is a track and slide arrangement that operates as easily as putting your feet into your shoes.

Merely attach the Hanger tracks to the ceiling and slip the factory-fastened slides of the Unit Cooler into them. Then tighten two screws and the job's done. The neatest and easiest kind of an installation imaginable. Practically all Peerless Unit and Dome Coolers now have "One Man Hangers" as standard equipment.

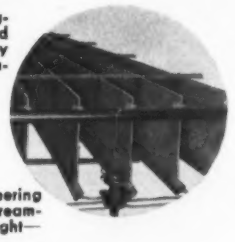


CANNON COOLER
The heavyweight champion of refrigeration! Hang it on the ceiling—stand it on the floor. For any large capacity refrigeration job at any desired temperature.

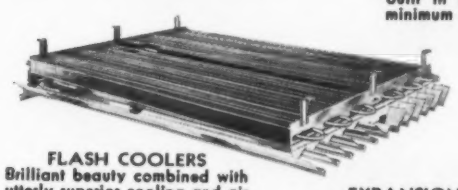


GUN COOLERS
Upside-down refrigeration—controlled with a Trigger! Featuring a new construction which mounts fan and motor on a removable front panel—leaves plenty of working space to install the valve.

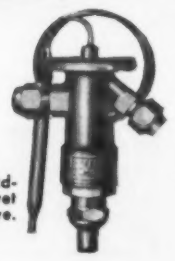
WATER SAVERS
1 to 100 ton units—amazingly low in cost. Peerless designing has built in maximum cooling with minimum water consumption.



ZERO PADS—A genuine engineering achievement in cold plate design. Streamline construction banishes useless weight—saves 75% of usual refrigerant cost!



FLASH COOLERS
Brilliant beauty combined with utterly superior cooling and air circulating qualities. Wider—shallower—save space.



EXPANSION VALVES
Valves for every purpose—including the original Peerless Velvet Action Thermal Expansion Valve.

Peerless OF AMERICA INC.

Midwest Factory, General Offices—515 W. 35th Street, Chicago

NEW YORK FACTORY
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Dallas, Texas

EXPORT DIVISION
P. O. Box 636
Detroit, Mich.

Cleveland Association Reports Winter Boom In Cooling

By Henry Knowlton

CLEVELAND—"There was more activity in air conditioning this December than at any comparable period in our history," declared C. E. Hansen, manager of the air conditioning department of the Smith & Oby Co., Carrier distributor here. Mr. Hansen, who is in close touch with the industry as president of the Cleveland Air Conditioning Association, stated that "we are having a hard time taking care of the calls that are coming in—let alone go after any new business."

The Smith & Oby organization also handles the Carrier line of commercial refrigeration, as well as Koch refrigerated display cases. Mr. Hansen reports that a considerable amount of activity has been noticed in the sale of florist refrigerators, and observes that this class of business has made unusual headway this year.

The Cleveland Air Conditioning Association, which meets once each month throughout the year, has concentrated on improving engineering standards on jobs sold in this area, and Mr. Hansen reports that the effort has been highly successful.

When any member of the local association makes a bid on an air conditioning system, this bid carries a form, or certificate, showing that the bid complies with the engineering standards that have been adopted by the association. In this way, the tendency to "underestimate" the amount of equipment necessary has been practically eliminated, Mr. Hansen reports.

During the past year the association has cooperated closely with local architects and engineers, holding joint meetings with these groups from time to time. The association has also worked closely with the local chapter of the A.S.H.V.E.

While there is no Cleveland "code" covering air conditioning, the group has a committee watching developments in the formation of a state code and this committee keeps in touch with local rulings and ordinances which govern the air conditioning industry.

Member firms in the Cleveland Air Conditioning Association at the present time are Smith & Oby Co. (Carrier); Avery Engineering Co. (Carbondale); Contract Welders, Inc. (G-E); Riester & Thesmacher (Westinghouse); Spohn Heating & Ventilating (Frigidaire); York Ice Machinery Corp. (York); Cleveland-York Co. (York); Ramsey Bros. (G-E); and the Frigidaire Branch of Cleveland.

Mr. Hansen reports that attendance at the local meetings has been excellent, with only five absentees during the past year. One reason for this record, he observes, is a $2.50 fine, imposed for not attending any regular meeting.

Mollenberg Heads Buffalo Council

BUFFALO — Richard H. Mollenberg, air conditioning specialist of Mollenberg-Betz Machine Co., has been elected president of the Air Conditioning Council of Western New York. He succeeds Edwin F. Cooney, president of Cooney Refrigeration Co., Inc.

Mr. Mollenberg served as vice president of the council during the past year, and is one of the youngest men ever to head the organization. Other officers for the year are:

Walter E. Voisinet of Walter E. Voisinet Air Conditioning Accessories, vice president; Harry C. Shafer, sales manager of Iroquois Gas Corp., treasurer; and Walter P. Davis, executive secretary.

NEW DIRECTORS

New directors of the Buffalo Council recently elected are: Joseph Davis, Davis Refrigeration Co., Inc.; Marshall Drake, George H. Drake, Inc.; C. Kenneth Ryan, C. Kurtzmann & Co.; A. E. Stratton, Coleman-Stratton, Inc.; and George H. Dietrich, Buffalo Electric Co.

Carry-over directors for the coming year are H. C. Day, American Radiator Co.; Joseph Collins, Frontier Engineering Corp.; D. L. King, Niagara Blower Co.; A. G. MacDairmid, American Lubricants, Inc.; W. A. Meiter, Worthington Pump & Machinery Corp.; H. D. Rice, New York Fire Insurance Rating Organization; and S. W. Strouse, the Trane Co.

Under council rules no director may succeed himself in office.

Console Model Dew-Aire Room Unit

• • •

Detroit Firm Begins Manufacture Of Dew-Aire Cooling Units

DETROIT—Manufacture of the "Dew-Aire" conditioning unit for summer, winter, and year-around air conditioning has been started by the newly organized air conditioning and refrigeration division of the Standard Computing Scale Co. here, according to an announcement by J. M. Bucher, president of the company. The new division will be headed by W. M. Stewart, who has been associated with air conditioning activities for a number of years.

The Dew-Aire unit, measuring 26 inches high by 21 inches wide by 26 inches long will be built with cold water coils, direct expansion coils, and steam or hot water heating coils according to local requirements. Capacities are given as from 1½ to 2 tons with water 60° F. or colder, and up to 3 tons when a refrigerating machine is supplied with the unit. Heating capacities range from 25,000 to 100,000 B.t.u. per hour, depending on the medium used.

For larger air conditioning systems, installation of the Dew-Aire unit in multiple, with a single compressor, is recommended by the company.

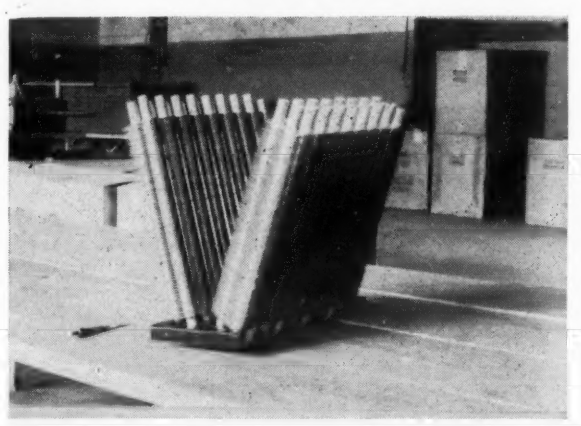
The Dew-Aire unit with standard walnut finish is priced at $185 f.o.b. Detroit, and is available in dark red mahogany or Swedish modern finish at a slight additional cost.

Standard Computing Scale Co. will also manufacture water-cooling coils in larger capacities for installation in connection with built-up air conditioning systems.

• • •

Coils for New Conditioner Line

This V-shaped coil is used in the Dew-Aire units employing cold water as a cooling medium. Capacities up to 2 tons are claimed for the console unit with 60° F., or colder, water.



'Hall of Weathermakers' Opened At Carrier Plant

SYRACUSE, N. Y.—Visitors to the Carrier Corp. plant here will soon be able to inspect the "Hall of Weathermakers," which is now being completed. All products sold by the Carrier organization will be on display, including much equipment moved from the Carrier Igloo at the New York World's Fair.

Cutaway models of many Carrier products are on display, and portable room cooling units with glass fronts will be in full operation.

'Odorsorbers' Trap Kitchen Fumes

NEW YORK CITY—The new Stouffer restaurant recently opened at 3 East 57th St., in one of the city's fashionable shopping districts, has installed Dorex odor absorbers in the kitchen exhaust duct to trap cooking odors and fumes before they can escape to surrounding buildings. A total of 864 canisters containing Dorex activated coconut shell carbon are being used to remove odors from exhaust air.

IF IT'S CONTROL YOU WANT..!

for TEMPERATURE

for PRESSURE

White-Rodgers uniformly calibrated dials, broad ranges, positive hydraulic action, high current ratings and ease of installation are offered in controls that fill every refrigeration need.

A postcard will bring complete data explaining exclusive advantages of White-Rodgers Controls—advantages which make them the choice of refrigeration men everywhere.

TYPE 1629
Hydraulic Action Temperature Control. Selective Range Adjustment covers any 10° within the total range of 20° to 75° Fahrenheit. Remote type bulb 8-foot flexible capillary.

TYPE 1535
Selective Range, Low-Side Pressure Control with lever adjustment. Any portion of the total range (25 inches vacuum to 50 lbs.) may be selected by the installer to permit adjustment by the user as load or weather conditions demand.

Ask for your copy of the new White-Rodgers Refrigeration Control Catalog.

• Controls For Refrigeration • Heating • Air-Conditioning •

WHITE-RODGERS ELECTRIC COMPANY

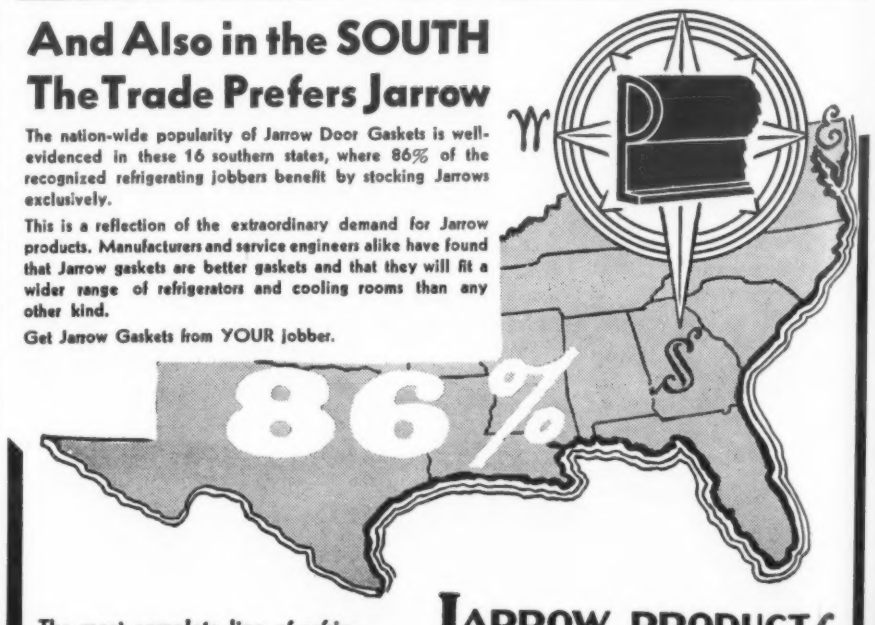
1211a CASS AVENUE • SAINT LOUIS, MISSOURI

And Also in the SOUTH The Trade Prefers Jarrow

The nation-wide popularity of Jarrow Door Gaskets is well-evidenced in these 16 southern states, where 86% of the recognized refrigerating jobbers benefit by stocking Jarrows exclusively.

This is a reflection of the extraordinary demand for Jarrow products. Manufacturers and service engineers alike have found that Jarrow gaskets are better gaskets and that they will fit a wider range of refrigerators and cooling rooms than any other kind.

Get Jarrow Gaskets from YOUR jobber.



The most complete line of refrigeration gaskets and sponge rubber insulation.

JARROW PRODUCTS

Factories: Chicago and Grand Rapids

General Office—420 N. LaSalle Street, JARROW PRODUCTS, Chicago, Illinois

'Quiz Programs' For Service Men Grow Popular as Check on Knowledge

Question-Answer Sessions Help 'Speed Up' Reactions To Common Service Problems

By Henry Knowlton

CLEVELAND—That "quiz programs" are becoming increasingly popular as "educational" features of R.S.E.S. meetings, was demonstrated at a recent session of Cleveland service men. The questions on refrigeration were posed by Elmer Wiedwald, educational committee chairman, to two five-man teams captained by George Schuld and Ben Laidman.

A. M. Fenwick of Contract Engineering Corp., chairman of the local chapter, and Henry Knowlton of AIR CONDITIONING & REFRIGERATION NEWS acted as judges in the closely fought contest. The contest ended in a tie.

Some of the questions asked by Mr. Wiedwald brought out extended discussions on the floor, with many shades of opinion expressed as to the exact answer. At times this placed the judges in a tough position, but in most instances an answer was found that was acceptable to the majority of service men present. Nearly all of the questions kept the group on its toes, mentally, and provided the basis of an interesting and instructive evening.

Here are some of the questions and the accepted answers:

1. What indicates a short in the capacitor in a capacitor type motor?

Answer: Motor does not start with current on. Spin motor, and if it starts and operates normally, the short is usually in the capacitor and not the motor.

2. Which of the three common refrigerants, sulphur, methyl, and "Freon," is most sensitive to moisture?

Answer: "Freon."

3. When installing wet coils in an 8 x 8-foot cooler, how much space should be allowed at the top and sides for air circulation?

Answer: At least 8 inches from the top and at least 4 inches from the sides.

4. What changes must be made in moving a refrigeration system from 60 cycle current to 25 cycle current to get the same capacity in the new location?

Answer: Because 25 cycle motors operate at 1,450 r.p.m. the pulley size must be increased and in certain cases the motor size.

5. What is the purpose of a thermal overload control?

Answer: To protect motor from burning up when overloaded.

6. What is indicated by a "frost-back" in a household refrigerator expansion valve?

Answer: Valve needs adjustment; shortage of charge; water in bellows; dirt in valve.

7. What is the meaning of the word "ambient" in the expression "ambient temperature?"

Answer: "Ambient" is the term used to designate the temperature of the surrounding air where a refrigerating machine is located.

8. Give the boiling points of the three common refrigerations?

Answer: Sulphur, plus 14° F.; methyl, minus 14° F.; "Freon" minus 21° F.

9. With no oil leak in system why will a compressor appear to be low on oil?

Answer: Oil might be in evaporator or receiver.

10. How does water (moisture) get into a system that operates above atmospheric pressure?

Answer: The velocity of the gas past a small orifice in a fitting or the tubing will draw in air containing moisture.

11. Give two ways in which dryers extract moisture, and examples of each?

Answer: Adsorption by capillary attraction—Silica Gel. Absorption by chemical, such as calcium chloride.

12. Why is it inadvisable to use calcium chloride as a dryer in a system suspected of containing a large amount of moisture?

Answer: The chemical would dissolve after so much moisture was taken up and go through the system.

13. What two types of refrigerant controls could be used on a multiple hook-up?

Answer: Thermal expansion valve or low side float.

14. What type of control is used on a dry type evaporator?

Answer: Thermal expansion valve or automatic expansion valve.

15. What difficulty occurs in the 3-phase motor when starting after a long shut down?

Answer: Disputed—no final opinion reached.

16. What is the purpose of a heat exchanger?

Answer: Keeps heat from traveling from the machine to the evaporator, thereby increasing capacity and eliminating flash gas.

17. Give five reasons why a high side float might not be letting liquid pass into the evaporator?

Answer: 1. Air bound; 2. float stuck; 3. float plugged; 4. collapsed bulb on float; 5. shortage of refrigerant.

18. What causes a chattering water valve?

Answer: Valve in backwards or water pressure too high.

19. Why are liquid and suction lines larger on "Freon" systems than on ones used for methyl or sulphur?

Answer: Larger volume of gas must be circulated due to characteristics.

20. What is the purpose of a surge tank, and where is it installed, in a liquid instantaneous cooler?

Answer: Surge tank is to prevent cycling due to small coil, and should be installed in the suction line above the machine.

21. Give three methods of cooling hot gas?

Answer: Water, air, or evaporative condenser.

22. Could Carrene or ethyl chloride be used in a system designed for methyl chloride?

Answer: No, a different compressor would be needed.

23. What controls could be used on flooded evaporator?

Answer: High side float, low side float, or capillary tube.

Philadelphia Association Elects Officers For '41

PHILADELPHIA — A. L. Hallstrom, Atlantic district manager of Graybar Electric Co., was elected president of the Electrical Association of Philadelphia for the third successive year at the recent annual balloting of the board of governors.

Other officers elected were: Vice president, Howard L. Miller of Utilities Engineering Co.; treasurer, Philip H. Ward, Jr., of Ward Electric Co.; and secretary, Robert J. Moran, chief of the electrical department of Middle Atlantic Rating Association. John L. Morrison is managing director of the association.

Utilities Engineering Institute Now Offering Resident Courses With Individual Instruction

CHICAGO—Extending its facilities to meet the current shortage of skilled workers in technical and mechanical lines, Utilities Engineering Institute has added resident evening courses in refrigeration and air conditioning, welding, drafting, and auto body craftsmanship. The resident courses are a departure from the school's usual training methods.

Substitution of individual instruction in place of conventional "classes" enables a man to progress as rapidly as his ability permits, and also prevents a slower man being pushed ahead of his normal pace, it is said.

Acting as registrar for the resident section is James E. Davidson, who has been actively engaged in technical education for the past 10 years, in both the teaching and administrative branches.

The resident training in refrigeration and air conditioning is being conducted by U.E.I.'s regular technical staff, using the increased facilities of the school's new refrigeration and air conditioning shops.

Heading the welding courses is George Cook, who is in charge of all welders in the construction of Chicago's subway. The welding shop provides for training in both arc welding and gas welding. A separate booth is allotted to each welding student.

In charge of the drafting division is Clarence O. Frederickson. Courses in drafting include aircraft, electrical, structural, and machine drafting.

Training in auto body craftsmanship takes in all skills required in auto body reconditioning. This includes welding, metal work, painting, upholstering, and glass installing.

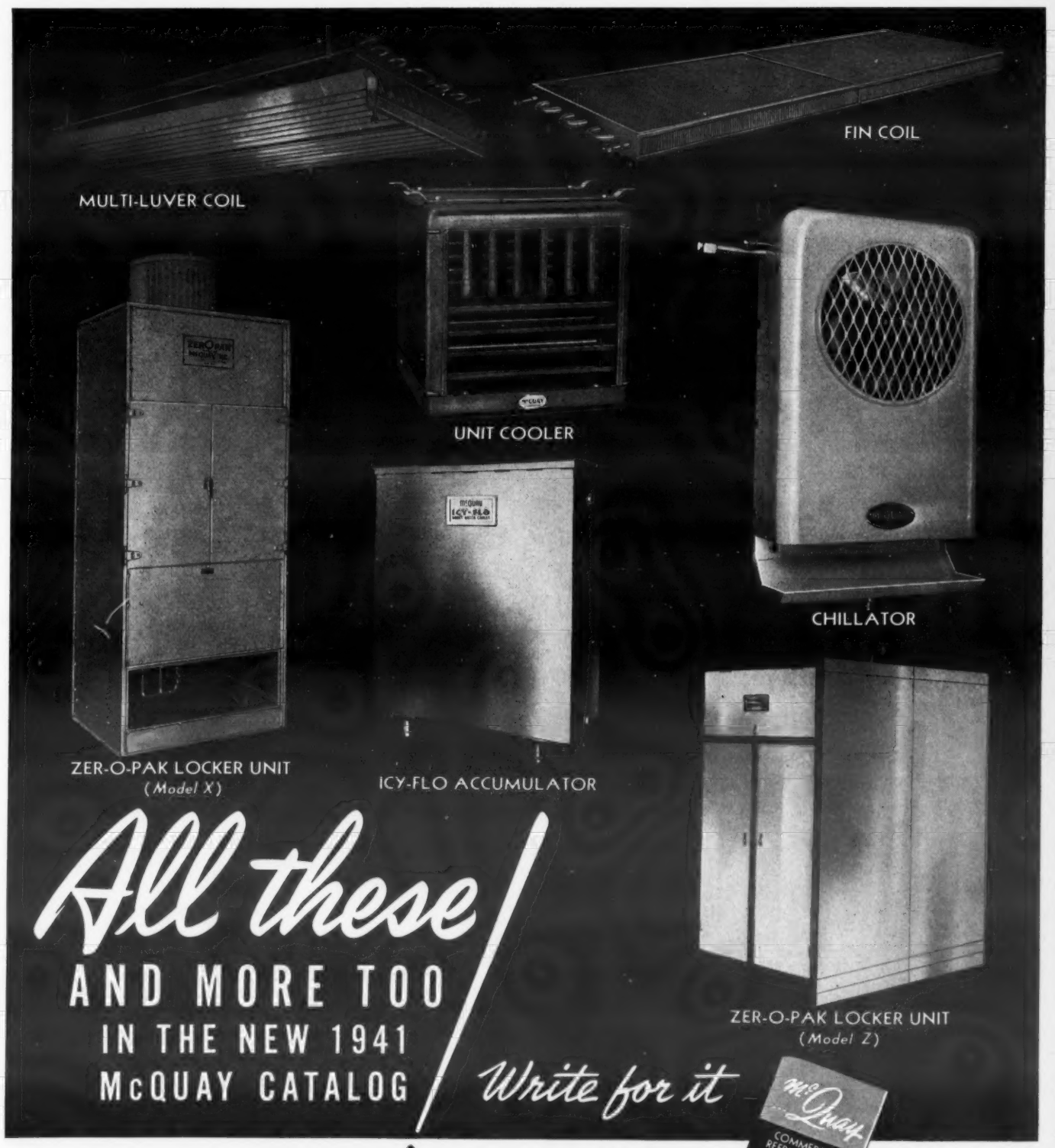
An extended resident plan has been worked out to enable men from outlying districts to enter the resident division.

Glenwood, Ark. Dealer Has New Building

GLENWOOD, Ark.—W. A. O'Neal, owner of the Red Ball Service Station, has erected a new building to accommodate a special display floor for the Kelvinator and Philco refrigerators, Kelvinator washers, and Philco radios which he handles.

New Wis. Locker Plant

MEDFORD, Wis.—Plans have been approved by the state for the erection of a frozen food locker building here by George Mathews & Sons.



All these AND MORE TOO IN THE NEW 1941 McQUAY CATALOG

Write for it

The 1941 McQuay line of Refrigeration Equipment has reached a new high in performance and dependability. The line has been largely expanded to meet the demand for heavy duty Commercial equipment in a score of new fields.

This larger and more complete line is unequaled due to the Exclusive McQuay Coil Construction whereby the tubes are hydraulically expanded into the wide fin collar insuring a permanent bond without the use of solder. This construction gives a larger area of contact between the fin and tube and is not only higher in Heat Transfer effectiveness but is trouble free as well. Units and coils are made in a large number of sizes and types to fit most requirements. Write for your McQuay catalogs today indicating the types of equipment in which you are most interested. McQuay, Inc., 1607 N. E. Broadway, Minneapolis, Minnesota.

McQuay INC.

Air Conditioners . . . Air Conditioning Coils . . . Blast Coils . . . Blower Coolers . . . Comfort Coolers . . . Cabinet Radiation . . . Concealed Radiation . . . Evaporative Condensers . . . Indoor Cooling Towers . . . Ice Cube Makers . . . Icy-Flo Accumulators . . . Refrigerating Coils . . . Room Coolers . . . Unit Heaters . . . Unit Coolers . . . Water Cooling Units

WELD? NO!

Not with the SQUARE D CLASS 9110 REGULATOR

Urged for use at full name plate ratings. *It will carry the load!*

RATINGS

1 H.P. 110 Volts A.C.
1½ H.P. 220 Volts A.C.
½ H.P. 230 Volts D.C.

DO IT ALL WITH SQUARE D—SWITCH • PROTECT • REGULATE

Jobber Inquiries Invited — SQUARE D COMPANY REGULATOR DIVISION DETROIT · · MICHIGAN — Write for Bulletin

Both Office and Store Benefit By Detroit Jobber's $5,000 Modernization Program

[Business Machines Permit Instant Check on Accounts

DETROIT—When he embarked on a $5,000 store and office equipment modernization program last fall Joe Oberc, head of J. M. Oberc, Inc., Detroit refrigeration and air conditioning supply jobber, put to work all the ideas he had been gathering during his eight years in the business.

Constant improvement of his store facilties has been a major point with Mr. Oberc ever since he started in business. He has used some ideas of his own and has showed a willingness to listen to the suggestions of others, with the result that he has a store interior that not only presents a fine appearance, but which does a selling job for him.

Among his improvements are the "Revolvo" trays (see picture) providing spaces or "bins" for 288 different items and kept right in back of the counter, display of fast moving items on the shelves right behind the counter, a glass display case for tools and gauges, and special racks of his own design with printed belt numbers for the display of "V" belts.

So when he came to his modernization program last fall, most of the effort went into improvements in the office equipment but a couple of major improvements were carried out in the store, namely:

1. Installation of a new sign rack, 2 feet deep by 22 feet long, placed above the row of shelves back of the counter, and designed for show cards. This rack will accommodate six large show cards measuring 22 inches by 43 inches, or 12 half size cards. For the half size cards Mr. Oberc has been using photostatic blowups of advertisements appearing in AIR CONDITIONING & REFRIGERATION NEWS.

2. Fluorescent lighting fixtures in both the store and office of the building which Mr. Oberc occupies as his headquarters. The lighting adds to the attractiveness of the store, and also lights up the displays to better advantage.

Improvements in the office operations include new business machines, principal ones of which are:

1. A Burroughs all-electric bookkeeping machine which posts the ledger and customer's statement simultaneously. This is used for accounts receivable, accounts payable, general ledger, and control accounts. It enables the supply jobber to send statements twice a month on the day following the closing of the semi-monthly period.

By looking at the ledger sheet for each individual account, it is possible to tell instantaneously the amount owed by the customer and the amount purchased to date, also the invoice numbers, dates, and amounts. All of this also appears on the statements, with the exception of the sales for the year to date. Similarly accounts payable ledgers have the same data except that it shows the purchases year to date and the amount owed to the supplier.

2. A Burroughs Moon-Hopkins all-electric billing machine and calculator. This machine feeds continuous invoice forms and the feature of the machine is that it itemizes and individually prices each item. The machine does the calculating and extends the amount figuring the discount. The amount is carried forward and by pressing a key the total is printed at the bottom of the invoice.

Designed as a time saver, the machine has a number of special ligatures which get as many as four letters on one key for standard sizes or descriptions applying to the jobbing business. It has all fractions from ⅛ inch up to and including ⅞ inch and the ligatures cover such standard terms as sweat, nominal, SAE, etc.

The sheet is also used to write purchase orders and all calculations in connection with purchase orders are made by the machine.

3. A model 900 all-electric addressograph for use in completing the company's direct-mail promotion.

4. A Friden calculator for use in making phone quotations.

Another part of the modernization program was the installation of an automatic steam heating system which is stoker operated.

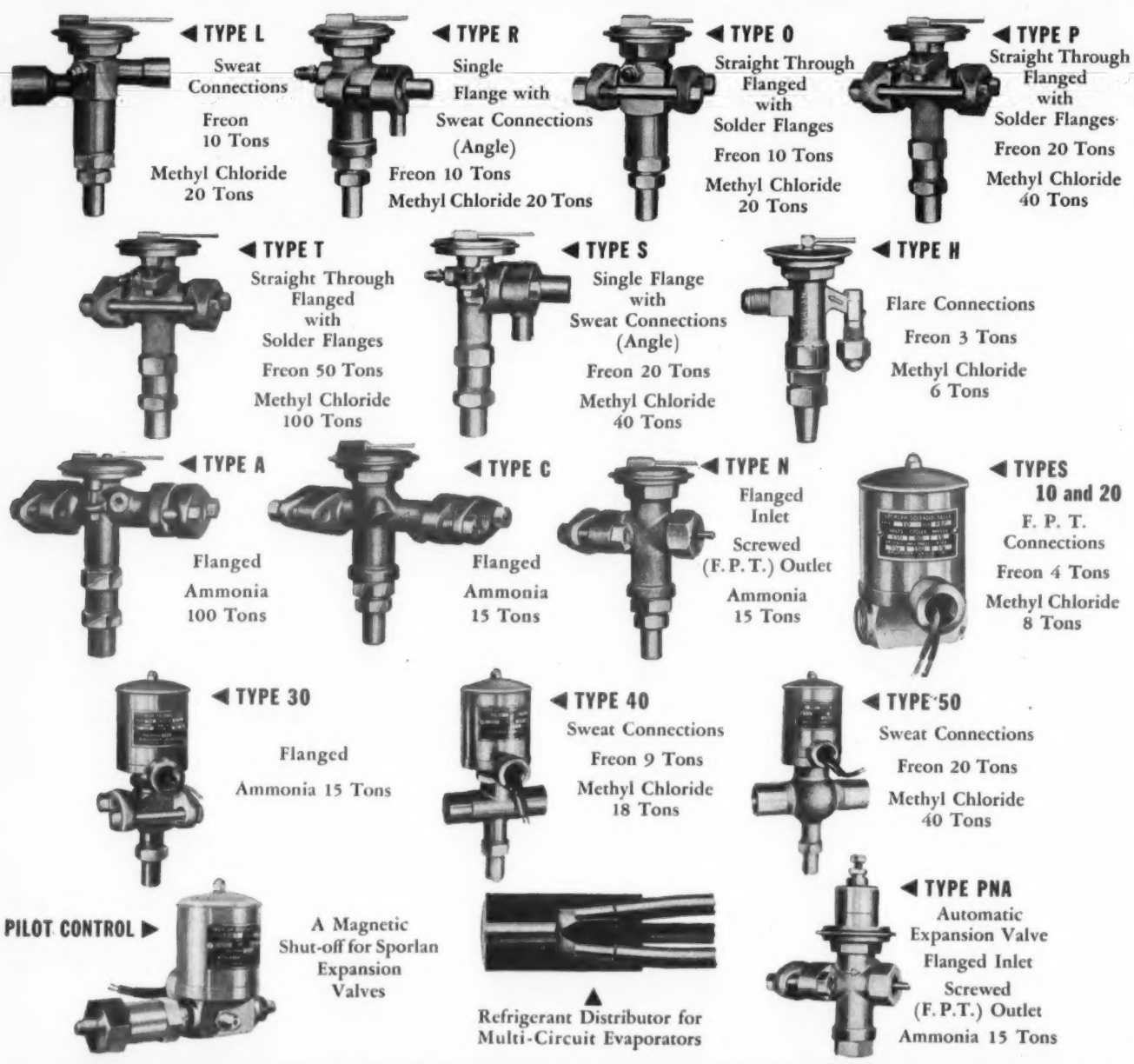
How a Refrigeration Supply Jobber Modernized His Headquarters

Speedier service and more effective display are two things for which Mr. Oberc is continually striving. Included in his recent modernization program were the new sign rack placed above the rows of shelves back of the counter and the fluorescent lighting fixtures. Also note the revolving small-part trays behind the counter, the glass display case at the left for tools and gauges, and the special V-belt racks (designed by Mr. Oberc himself) on the wall.

Here is the modernized Oberc office "in action." Special business machinery played a large part in the firm's improvement program.

The entire Oberc staff posed for this picture. Front row, left to right: Irene Borke, billing clerk; Mrs. Dorothy Oberc, vice president; Ercil Cooley, bookkeeper. Second row, left to right: M. J. Morell, office manager; Stuart King, sales engineer; E. H. Davey, secretary; Ed Germain, buyer; Frank Weiss, inventory control; Louis Wallace, head of the company's East Side branch; Frank Marsh, receiving and shipping; J. M. Oberc, president; Jim Haviland, counter sales. By himself in the background is Phillipp Padgett, assistant to the president.

THE ONLY AIR-CONDITIONING AND REFRIGERATION VALVES WITH SELECTIVE CHARGES



SPOEHRER-LANGE COMPANY
3725 COMMOMWEALTH AVE. • • ST. LOUIS, MISSOURI

Forged Brass Manifolds

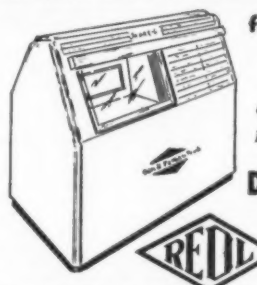
Furnished either with Packed or Packless Type Valves in 2 and 3 unit pieces.

Our Forged Brass Manifold Bars are machined 1⅛" O.D. and are tapped with ½" I.P.S., so that either threaded adapters or standard 1⅛" O.D. solder fittings may be used in making connections.

A complete line on display at our booths Nos. 120 and 121, at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

CASH-IN on the DEMAND for the REOL *(Patented)*



Faster-Selling QUICK FROZEN FOOD **DISPLAYER**

Write for exclusive Distributor-Dealer proposition.

REOL

THE REOL COMPANY
Hearst Tower • Baltimore, Md.

Buffalo Utility Turns All Appliance Selling Over To Dealers

(Concluded from Page 1, Column 1)

the power company will discontinue the direct sale of all electrical merchandise except water heaters, and substitute a cooperative sales program whereby company salesrooms will display and sell merchandise placed there by distributors and dealers.

This is in line with a trend in evidence at the power company for several years. During the past year the power company discontinued several outlying merchandise stores in the Buffalo area, and gradually has been getting out of active appliance selling.

During 1940, persons wishing to buy electrical appliances from the power company had to come directly to the Electric Building in downtown Buffalo, where extensive floor displays of the larger appliances are maintained. Such appliances as ranges, lamps, roasters, and water heaters were sold from this floor by power company salesmen.

NO MORE SALESMEN

But these salesmen are now no longer in the company employ. Instead, a small force is maintained by the power company merely to demonstrate appliances on the floor. Actual sales of these appliances will be made through the dealers' accounts.

The power company, up until 1933, sold virtually every type of electrical appliance. In 1933, it went out of the appliance field entirely because it felt at that time the dealer was able to carry the load himself. Two years later, however, the power company decided to put additional pressure on ranges and water heaters—the two major load builders—and during the past five years has been active in the selling of major appliances.

Under the new setup, the power company will continue its advertising and promotion of appliances on just as active a level, but it will be done over a broader field without reference to the selling of these appliances. In a range campaign, for example, the power company will stress the advantage of electric cookery and refer prospects to dealers in the community whom they can contact.

It was pointed out that the new setup in Buffalo will be similar to the one in Niagara Falls, where the power company has never had to enter the selling field because dealers have always had the situation well in hand in the "Power City," where electric rates are exceedingly low and ranges are the rule rather than the exception.

WIRING ALLOWANCE OUT

Under the new program, wiring allowances on electrical installations are also discontinued.

In explaining the new sales operation, Mr. Skinner said: "We believe that our curtailment of certain sales promotional activities at this time is indicated by the outstanding selling record now being maintained by retailers and distributors of electrical appliances, and that our broader, more general promotion will stimulate further increased selling on the part of individual dealers."

Maps New Policy

MERRILL E. SKINNER
Vice president of Buffalo Niagara Electric Corp., which has discontinued its appliance merchandising activities and will concentrate on promotion through dealers.

Westinghouse Drops Its 'Special' To $114.95

(Concluded from Page 1, Column 1)

the "Betsy Ross" all-porcelain model BP-6-41 has been increased $5 to $164.95 in Zone 2. All prices are "installed," and include five-year protection on the refrigerating mechanism.

Complete Zone 2 (New York) installed prices now line up as follows:

AS-6-41	$114.95
S-6-41	129.95
B-6-41	139.95
BP-6-41	164.95
H-6-41	169.95
D-7-41	179.95
B-9-41	179.95
M-7-41	199.95
DP-7-41	209.95
H-9-41	209.95
M-9-41	229.95
MP-9-41	249.95
U-3-41	111.95
AS-4-41	119.95
A-135-40	419.50
E-135-40	469.50
A-200-40	489.50

Chelsea Fan & Blower Co. Moves To Irvington, N. J.

IRVINGTON, N. J.—Chelsea Fan & Blower Co. has moved from New York City to a new location at Olsen and Grove Sts. here. The company purchased this plant as part of a current expansion program.

New Philcos Feature Sub-Zero Section

(Concluded from Page 1, Column 2)

frozen food compartment claimed to provide temperatures of from —15° to —30° F. This compartment is enclosed in a plastic frame at the top of the cabinet, and has transparent doors, chrome trimmed.

In the regular food storage compartment in these models cooling is supplied by a flat aluminum plate coil, which utilizes a secondary refrigerant.

In the styling of the cabinets the use of a white plastic door trim provides the effect of an unbroken, all-white design. The shelves and the Conservador are chrome trimmed.

There are three sixes, two sevens, and two nines in the line, with the established prices ranging from $114.95 to $259.50. Full details on the refrigerator line will be given in the next issue of AIR CONDITIONING & REFRIGERATION NEWS.

Philco officials indicated that no new Philco air conditioner models would be announced until the middle of March.

Installs Demonstration Kitchen

DALLAS, Tex.—A complete electric kitchen has been installed by the Bebb Francis Furniture Co. here.

Zimmerman To Direct Airtemp Account

DAYTON, Ohio—P. B. Zimmerman, formerly a general sales manager for General Electric and Norge appliance divisions, becomes the account executive directing Chrysler Airtemp division advertising, as that concern switches its advertising to Grace & Bement of Detroit.

Hill Joins Westinghouse In Southwest Region

DALLAS, Tex.—Ray Hill, former manager of the appliance department for W. A. Green Co. of Dallas, and for the past year associated with Westinghouse Electric Supply Co., with headquarters here, has been named in charge of merchandising sales for the southwest district of Westinghouse.

Big Norge Texas Orders

DALLAS, Tex.—Looking to a record sales season ahead, Texas Norge Sales Co. here has orders for 2,500 refrigerators, 2,000 gas ranges, and 1,250 washing machines, reports W. J. Schnelle, president. The orders total more than a trainload, with value at $350,000.

VISIT OUR
PREVIEW
SHOWING
New, improved 1941 line of Displayors for
QUICK FROZEN FOODS
DAIRY PRODUCTS
(Self Service)
ICE CREAM
●
Blackstone Hotel
PARLOR B
JANUARY 13 to 25

The CHARLES Q. SHERMAN Corporation, NEW YORK • CHICAGO
MAKE YOUR HEADQUARTERS WITH US

THE NEW 1941 NATIONAL REFRIGERATOR MARKET REPORT

LISTS OVER 2000 MAKES AND MODELS
COMPLETE ILLUSTRATIONS·SPECIFICATIONS
ASSIGNS FAIR TRADE-IN VALUES

A survey by the Associated Refrigerator Plant, Inc., shows that 96% of all trade-ins are boxes manufactured between the years 1928 and 1934. In view of this fact — it is imperative that all dealers trade conservatively if they want to tackle the replacement market and make a fair margin of profit.

Summary of Ages of 1198 Trade-In Refrigerators

Boxes Received	192/	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	Totals
Frigidaire	29	62	127	8	17	17	79	14	7	2	0	362
Westinghouse	0	0	0	0	14	42	15	7	0	0	0	78
Norge	0	0	0	0	85	19	37	9	1	0	1	152
General Electric	0	59	104	58	18	63	43	33	5	0	0	383
Kelvinator	0	10	21	21	20	36	65	42	6	2	0	223
												1198

Percentages of boxes traded in within years as listed below on basis of this survey!
1928 — 1931 56% 1928 — 1933 87%
1928 — 1932 67% 1928 — 1934 96%

NOTE: These figures included only refrigerators purchased by the Associated Refrigerator Plant, Inc. No boxes sent in for reconditioning are included.

Customers are educated to accept published trade-in values in other fields — they will accept published prices of trade-in values in the refrigerator field.

Act Now — eliminate disastrous competitive trade-in allowances in your locale by adopting "The National Refrigerator Market Report."

NRMR
THE
TRADE-IN BLUE BOOK INSURES
PROFITS ON SALES BECAUSE....

1
It lists and illustrates over 2,000 models of domestic type refrigerators so that they may be readily identified by customer and dealer. Thus all guesswork as to age or model is eliminated.

2
It gives a fair, conservative value to each model listed, and thus eliminates the danger of excessive allowances.

3
Its neat and complete make-up impresses the customer — and in general its appearance and lists serve as an effective antidote for the customer's inflated sense of value of his "trade-in." SEEING IS BELIEVING!

4
Its trade-in appraisal values are designed to let the dealer MAKE A PROFIT on his replacement sales.

5
Its complete editorial section tells the dealer how to trade profitably, how to resell the refrigerator traded — HOW TO RECONDITION A REFRIGERATOR.

ORDER NOW
$3.50 EACH

Please send at once ——— copies of the NATIONAL REFRIGERATOR MARKET REPORT
NAME .....
ADDRESS .....
CITY .....
NATIONAL REFRIGERATOR MARKET REPORT, Inc.
3028 W. Hunting Park Ave., Phila., Pa.

1 to 50 Copies $3.50 Each
51 or More Copies $2.00 Each
Enclosed Please Find:
☐ Check ☐ Money Order
Orders accompanied by check or money order will be shipped postpaid.

ONE TRADE-IN PROPERLY EXECUTED ON THE BASIS OF PRICES ESTABLISHED IN THE BLUE BOOK WILL PAY FOR THE COST OF A BOOK MANY TIMES OVER.

Operating and Service Methods For Dry-Expansion Counter Freezers

Hookup and Operating Pressure on Taylor 1-Gal. Freezer

Editor's Note: This is one of a series of articles on service methods for low temperature equipment found in use in retail stores. This particular part of the series deals with counter-type ice cream freezers, and later articles will give servicing details on frozen food cabinets and ice cream cabinets.

These articles are written by Arch Black and Dean C. Seitz, who wrote the "Soda Fountain Refrigeration Manuals." Mr. Black heads the export sales and engineering division of Norge, and was formerly with Melchior, Armstrong, Dessau, and Temprite. Mr. Seitz is assistant manager of the commercial refrigeration department of York Ice Machinery Corp., and was formerly a vice president of Russ Soda Fountain Co.

By Arch Black and Dean C. Seitz

2. TAYLOR "FREEZ-MATIC" 1-GALLON HORIZONTAL FREEZER

The Taylor "Freez-Matic" is a 1-gallon horizontal freezer equipped to make and store soft ice cream, malted milk, and other frozen confections. The products made may be sold as soft ice cream, frozen malted, etc., and drawn directly from the freezer or removed to a cabinet.

Standard or special ice creams may also be made in the Freez-Matic and drawn in packages or cans and placed in a hardening cabinet.

On the Taylor Freez-Matic model AF-1 an aluminum base supports a ⅛-hp. repulsion-induction motor and an aluminum front plate. The horizontal freezer mounts inside the front plate.

A manual switch controlling only the beater motor is mounted on the left side of the front plate while an automatic control for both beater and compressor is mounted on the right side of the front plate. Power from the beater motor is transmitted by a belt to an enclosed spur-gear unit mounted on the rear of the freezer shelf.

The stainless steel hood is attached to the aluminum back plate to form an enclosure for all operating parts. This hood can be removed by removing two screws from the bottom of the back plate and two screws at the edges and half way up the front.

The automatic control is an electric clock-type timer which cycles each 10 minutes and which operates two mercury switches. One of these switches operates the beater motor and the other operates the compressor motor on single unit installations or a magnetic valve in the suction line of multiple installations. Later articles under the heading of "Taylor 'Freez-Master'" will give more details regarding this automatic control.

A pressure switch must be connected into the suction line so that it will close the circuit to the compressor motor or magnetic valve whenever the pressure in the freezer shell exceeds 40 lbs. This switch is to protect the freezer shell whenever hot water is used to wash the freezer. If 180° F. water is used for washing freezer, the resulting pressure would exceed 300 lbs. if the pressure switch were not used.

The usual installation consists of one Freez-Matic on a suitable cabinet with a ½-hp. condensing unit refrigerating the freezer only. When the Taylor company supplies the condensing unit it is a ½-hp. air-cooled unit mounted complete with all valves and fittings and a rubber drop cord to supply both condensing unit and freezer motor with current. While the usual installation is as above stated the purpose of this article is to consider other applications because in later articles on the "Freez-Master" more details will be given regarding self-contained units.

Fig. 18 shows wiring and refrigeration diagram for one Freez-Matic, while Fig. 19 shows wiring and refrigeration circuit diagram for two or more Freez-Matics with or without extra evaporator on one compressor.

CHANGES WITH 2 FREEZERS

Two or more Freez-Matics can be operated from one compressor, ¾ hp. or larger size. In a hookup of this type it can be noted from Fig. 19 that only one expansion valve is used for both. With separate valves for each only one freezer could be operated at one time while with a single valve all may operate together if compressor capacity is available.

The magnetic valves are operated by the automatic control and permit refrigeration only when the valves are open and, as above stated, the pressure switch operates the magnetic valve to prevent excessive pressure when the freezer is washed with hot water.

Condensing unit is controlled by operation of a separate pressure switch set to cut in when a magnetic valve on a Freez-Matic is open. Any setting below 7 lbs. may be used as this permits refrigeration of other low temperature evaporators by the same compressor.

On each Freez-Matic a Detroit Lubricator No. 676 automatic expansion valve is applied, but when using these Freez-Matics in multiple installations only one should be used. If additional low sides are put in the system, thermostatic expansion valve should be used on each additional low side other than the Freez-Matic.

Fig. 19 shows connections of two Freez-Matics and a cabinet. The same connections should be used for either remote or self-contained units. The pressure switch on the condensing unit serves to stop the compressor when a magnetic valve in the freezer is closed or closed by the control. Separate electrical line is shown to the control, the freezer motor, and the magnetic valve. This is for 110 volts 60 cycle single phase only as the automatic control operates only on this voltage.

OPERATING PRESSURES

A single Freez-Matic on a ½-hp. air-cooled compressor will operate at 10 lbs. suction pressure methyl chloride, and approximately 16 lbs. "Freon." Larger compressors require lower suction pressure, a 1-hp. unit operating at 6 lbs. methyl chloride or approximately 11½ lbs. "Freon."

On multiple installations each valve must be adjusted individually to these pressures mentioned. Satisfactory operation cannot be expected with less than ½ hp. per freezer on single units or ⅓ hp. per freezer on multiple installations.

When operating, each freezer contains 1 lb. of refrigerant and a safe refrigerant charge is 2 lbs. per freezer in addition to that required for other low sides.

LUBRICATION

Every six months remove the freezer head and add two teaspoonfuls of light S.A.E. 20 or 30 auto engine oil to each motor bearing. At the same time remove the ⅛-inch plug of the elbow on the left side of the gear case back of the freezer shell. The oil should be ¼ or ⅜ of an inch from the top of the elbow. If more oil is needed, add oil from can supplied by Taylor.

Fig. 18—Diagram For a Single 1-Gal. Freezer

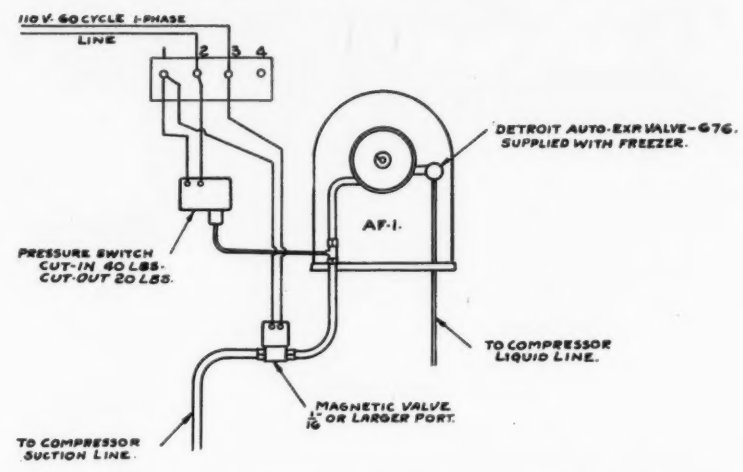
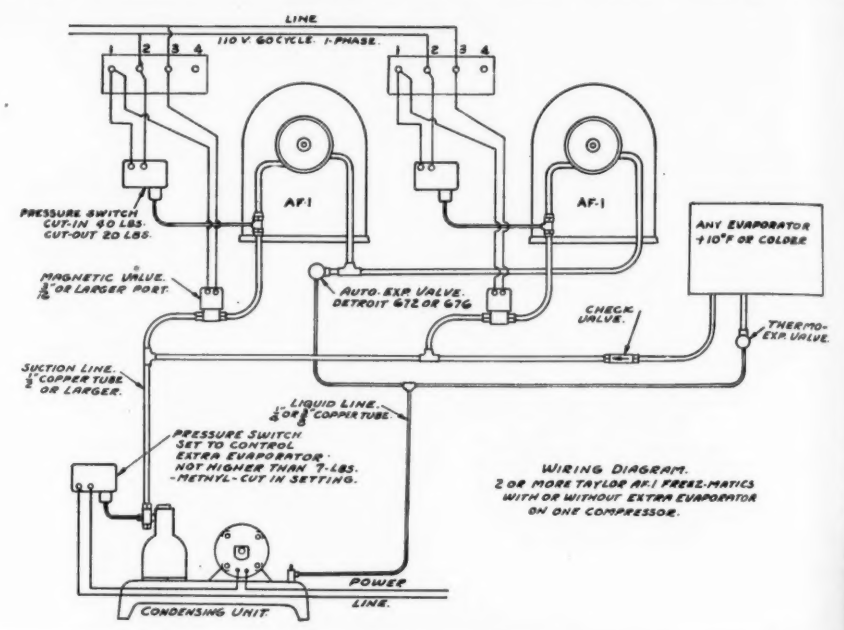

110 V. 60 CYCLE 1-PHASE LINE
1 2 3 4
DETROIT AUTO-EXP VALVE—676. SUPPLIED WITH FREEZER.
AF-1.
PRESSURE SWITCH CUT-IN 40 LBS. CUT-OUT 20 LBS.
TO COMPRESSOR LIQUID LINE.
MAGNETIC VALVE. 1/16 OR LARGER PORT.
TO COMPRESSOR SUCTION LINE.

Fig. 19—Two Freezers With an Extra Evaporator


LINE
110 V. 60 CYCLE 1-PHASE
1 2 3 4
AF-1
AF-1
PRESSURE SWITCH CUT-IN 40 LBS. CUT-OUT 20 LBS.
ANY EVAPORATOR +10°F OR COLDER
MAGNETIC VALVE. 1/16 OR LARGER PORT
AUTO. EXP. VALVE. DETROIT 672 OR 676
CHECK VALVE.
THERMO-EXP. VALVE
SUCTION LINE. 1/2" COPPER TUBE OR LARGER.
LIQUID LINE. 1/4 OR 3/8 COPPER TUBE.
PRESSURE SWITCH SET TO CONTROL EXTRA EVAPORATOR NOT HIGHER THAN 7-LBS. METHYL-CUT IN SETTING.
WIRING DIAGRAM. 2 OR MORE TAYLOR AF-1 FREEZ-MATICS WITH OR WITHOUT EXTRA EVAPORATOR ON ONE COMPRESSOR.
POWER LINE.
CONDENSING UNIT.

Hardy-Mayflower
Commercial Refrigeration Compressors

Appeal to the mechanically minded customer
Rugged but simple in construction
Require very little service.

Write to

Hardy Manufacturing Co., Inc., 126 Davis Ave.
Dayton, Ohio

Get your expense money
at BOOTH 73

Third Annual All-Industry Refrigeration
and Air Conditioning Exhibition
(Stevens Hotel, Chicago, Jan. 13-16)

—●—

SEVEN CASH PRIZES
for the best name for a
NEW MARSH CHARGING
AND TESTING UNIT

YES, among the other advanced equipment at Booth 73, is a brand new Marsh charging and testing unit. It is truly revolutionary—a vital tool that has everything . . . but a name.

You know real equipment when you see it, and therefore you are just the man to give it some good, descriptive name worthy of its wide range of application.

Simply qualify yourself on an entry blank obtainable at the Marsh booth. Win, lose, or draw your expedition to the Marsh Booth will be well rewarded by the 1941 line-up of Marsh Gauges, Thermometers and Recorders.

JAS. P. MARSH CORP.
2067 Southport Ave., Chicago, Ill.

MARSH
REFRIGERATION INSTRUMENTS

Little Giant Purger

Lower power consumption
Lower operating pressures
Longer compressor life
Increased efficiency

Send for literature, or better still—See it at our booths Nos. 120 and 121 All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago—Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

VIRGINIA IS LOOKING FORWARD TO SEEING YOU IN CHICAGO NEXT MONDAY AT BOOTH 126

REMA Refrigeration Equipment Manufacturers Association

BUY YOUR KINETIC'S FREON-12* VIA VIRGINIA *Reg. U. S. Pat. Off.

EXTRA DRY ESOTOO · Methylene Chloride · V-METH-L

VIRGINIA SMELTING CO.
Located at tidewater
WEST NORFOLK, VIRGINIA

V VIRGINIA

Equipment for a Rebuilding Plant

3. Compressor Testing Device

By Edward M. Siegel, Associated Refrigerator Plant, Inc., Philadelphia

We have a special instrument that we use for the checking of volumetric displacement of our small compressors. As all of you readers doubtless know, high and low side gauges on a unit tell only half the story. They tell nothing definite about the efficiency of the unit as far as pumping capacity is concerned.

For the purpose of measuring the volume of air or gas which a compressor will pump, we use an instrument known as a Rotameter. The Rotameter is a flow metering instrument used to accurately measure rates of flow of oil, air, gas, chemicals, water and other fluids, both liquid and gaseous.

It consists essentially of a vertical tube having a tapered bore (with the small end at the bottom) and a top-shaped rotor placed inside the tube and held in suspension by the upward flow of liquid or gas. The tapered tube is either made of chemical glass, synthetic material, or of metals when operating conditions require.

The rotor is entirely free and is caused to rotate by means of specially shaped slots cut in its head against which the fluid passing through the Rotameter impinges. The rotor remains in the center of the fluid stream and is frictionless in operation. This permits very accurate reading to be obtained with the Rotameter.

The annular space between the rotor and tube, i.e., the area of the annular orifice through which the fluid must pass, increases as the rotor is carried upward by increasing flow. The position of the rotor is therefore in direct relation to the rate of flow and the calibration is almost a straight line. The Rotameter operates in a manner exactly opposite to an "orifice" or "venturi" meter since the flow head on the annular orifice (as determined by the weight of the rotor) remains constant and the area of the orifice varies directly as the fluid flow.

The tapered glass metering tubes (or the sight windows when metal metering tubes are used) are provided with etched-on millimeter reference scales or direct reading capacity scales to facilitate accurate determinations of the rotor position. Rotor stops at the lower ends of the tubes confine the rotors in the tubes and a combination rotor stop and safety head at the upper end prevents the rotor from striking the tapered metering tube no matter how large or small the flow at any moment may be. Sliding pointers are sometimes provided on vertical support rods. These are set in accordance with the rate of flow which is to be maintained.

The materials of which the rotor and frames of Rotometers are made depend on the fluids to be handled.

Fig. 1 is a cross-section view of a standard Rotameter. These instruments are manufactured by the Schutte-Koerting Co. with offices in all principal cities.

A standard Rotameter as used for refrigeration work may be calibrated directly in c.f.m., so that the capacity of the pump may be read directly at a given pressure. At our plant, we test all our small compressors at 200 lbs. pressure. Our gauge will read with consistent accuracy all rates of flow between .2 and 2.0 c.f.m. Thus we can check all jobs from 1/10 to ⅓ hp. for volumetric displacement.

While these instruments are rather expensive, we feel that they are indispensable to a shop which is attempting to do the best possible job. Checking the unit with gauges alone is doing only half the job. Checking it with gauges and a Rotameter will tell the complete story. A drawing of our test hook-up using this Rotameter is given in Fig. 2.

Fig. 1—Rotameter

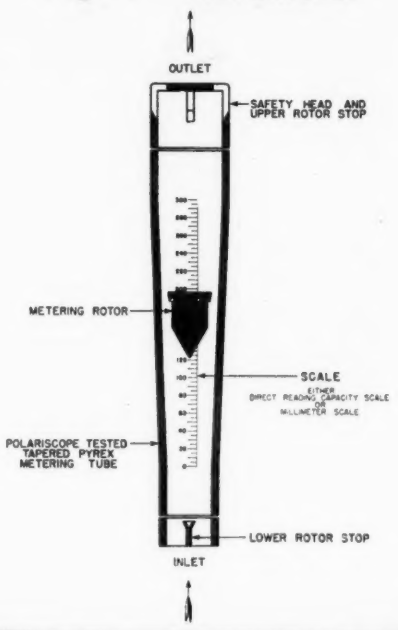
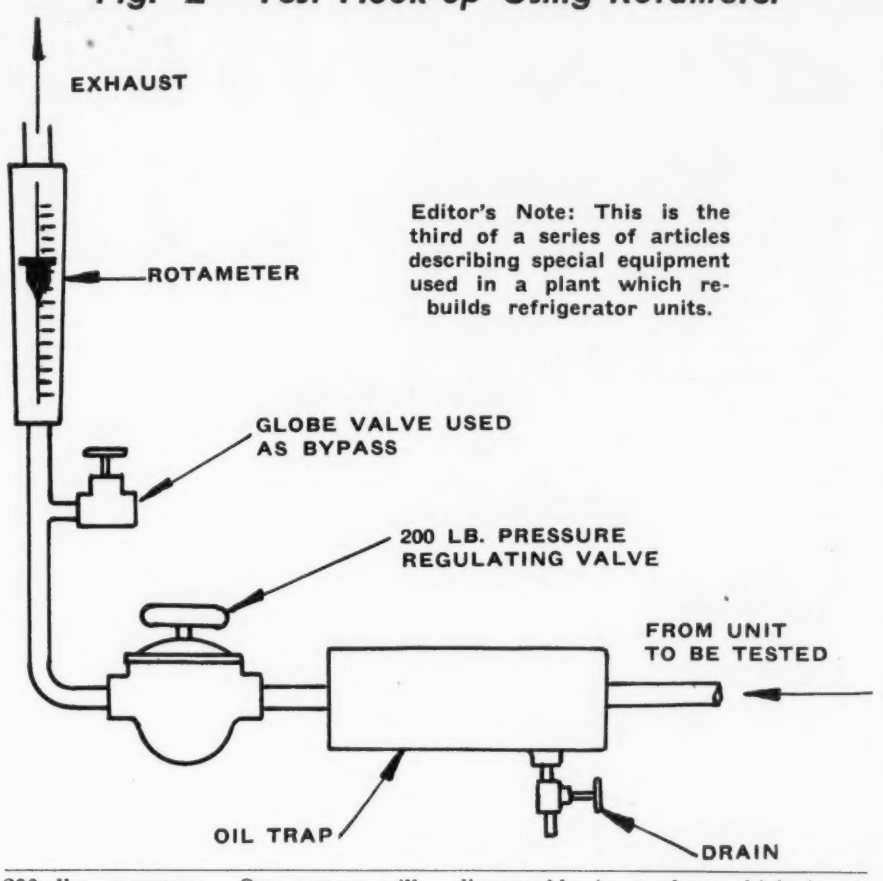


Fig. 2—Test Hook-up Using Rotameter



Editor's Note: This is the third of a series of articles describing special equipment used in a plant which rebuilds refrigerator units.

Frost Free
CONSTANT COLD

The Thermostat OPERATES THE POLARTRON

An Exclusive M-H Principle

POLARTRON and MERCURY SWITCH Controls FOR EVERY APPLICATION

P740—1 H. P. @ 110V, 2 H. P. @ 220V, A.C. Reconnectable relay for 110 or 220V, 50 to 60 cycles.

P742—2 H. P. @ 110V, 3 H. P. @ 220V, 5 H. P. @ 440 or 550V, single phase A. C. 3 H. P. @ 110V, 5 H. P. @ 220V, 7½ H. P. @ 440 or 550 V, Polyphase.

L740 and L742 Polartron TEMPERATURE Controls also available at same electrical ratings with or without High Pressure Cutout and Overload.

Ranges: Temp. —50 to +20° F., —10 to +50° F., 15 to 80° F., 65-95° F.

P740 AND P742 POLARTRONS

Range: Low side, 22" vac. to 65 lbs.; High Pressure Cutout, 75 to 240 lbs. Differential: Low side, 4 lbs. to 76 lbs.; High Pressure Cutout, 27 lbs. to 100 lbs. Thermal Overload Cutout: Optional with indicator and on-automatic switch.

L414 HEAVY DUTY SUCTION PRESSURE CONTROLLER—The Mercury Switch starts the compressor on rise to cut-in pressure, and stops the compressor on fall to cutout pressure. Main scale and differential adjustments have scales visible outside case. RANGE: 22" vac. to 35 lbs., or 2 to 50 lbs. cutout. Differential 2-30 lbs. Electrical ratings, see T414.

T414 HEAVY DUTY TEMPERATURE CONTROLLER—Similar to L414 above except mercury switch is operated by remote bulb temperature element, 6, 10 or 20 ft. lengths with small or milk cooler bulb. RANGES: —50 to +10° F.; —10 to +50° F.; 15 to 65° F. Differential 3½° to 13°. Electrical Ratings of 414 Controls, 1½ H. P., 110V. A. C., 2 H. P. 220V. A. C., ¾ H. P. 115/230 D. C.

P400 LIGHT DUTY SUCTION PRESSURE CONTROLLER—Similar to L414 except ratings. Same as for L426.

L426 LIGHT DUTY TEMPERATURE CONTROLLER—Similar to T414 except for ratings and ranges. RANGES: —50 to + 20°; —20 to +50° F., and 15 to 65° F. Electrical Ratings of P400 and L426: ¾ H. P. 110/220 volts A. C. ¼ H. P. D. C.

L413 COMBINATION HEAVY DUTY SUCTION PRESSURE CONTROL with High Pressure Cutout—Provides same operation as L414 and in addition the mercury switch stops the compressor in case of excessive rise in head pressure.

RANGE: Suction pressure, same as L414; High pressure cutout, 110-135 lbs., 150-180 lbs., 185-220 lbs. Differential: Suction pressure, same as L414, H.P.C.O., 25, 30, or 50 lbs., non-adjustable. Electrical ratings same as T414.

T413 COMBINATION HEAVY DUTY TEMPERATURE CONTROL and High Pressure Cutout. Same as T414 but in addition switch stops the compressor in case of excessive rise in head pressure. RANGE: Temperature, see T414. High pressure cutout, see L413. Electrical rating of 413 controls, see 414 controls.

P401 COMBINATION LIGHT DUTY SUCTION PRESSURE CONTROL with High Pressure Cutout. Same as L413 except electrical rating is same as P400.

L427 COMBINATION LIGHT DUTY TEMPERATURE CONTROL with High Pressure Cutout. Same as T413 except electrical rating and ranges same as L426.

Series 40 POLARTRON
THE SIMPLEST • MOST VERSATILE
PRESSURE CONTROLS
Make this check and dont be fooled

ONLY if you can change EITHER the cut-in pressure OR the cut-out pressure without affecting the other does a control have independent adjustments.

Anyone who has ever adjusted a refrigeration control by the old "cut and try" method, can appreciate at once the advantages of being able to adjust the ON pressure with one dial and the OFF pressure with an entirely separate and independent dial . . . an exclusive M-H feature since 1938.

If you wish, each Series 40 Polartron adjustment dial is furnished with its own accurately calibrated full-length visible scale.

ENTIRELY Independent KNOBS TO SET THE ON AND OFF PRESSURES

RANGE—Low Side, 22" to 65 lbs. High Side, 100-240 lbs.

RATING—¾ H.P. 110 V.; 1 H.P. 220 V., A.C.; Pilot 440 V. & D.C.

These Standard Features included with each control at no increase in cost often eliminate as many as 24 "specials"...

COLD CONTROL • Every low-side control is furnished with a cold control lever which may be easily installed on either the cut-out or cut-in knob to give the user a safe, limited adjustment. If not used, it may be discarded.

ADJUSTMENT COVER • A cover furnished as standard may be installed over the Cold Control lever, or may be inverted to completely seal the adjustments when the lever is not used. Screws are cross-drilled for a wire seal.

PROVISION FOR REVERSE ACTION • Each switch has a "reverse-acting" terminal, which is often useful to control a unit cooler fan or for alarm circuits.

These and many other features are STANDARD on M-H Series 40 Polartrons, and contribute to their rapidly increasing popularity among men "in the know." They were designed with just one thought in mind—to meet ALL commercial refrigeration needs in ONE simple control.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2807 FOURTH AVENUE S., MINNEAPOLIS, MINN. • COMPANY OWNED BRANCHES IN 49 CITIES

TYPES AVAILABLE
P420 POLARTRON Low-Pressure Control
P421 POLARTRON Combination Pressure Control
P422 POLARTRON High-Pressure Cut-out (with manual reset if requested)
W66 Cover for Manual "Start" or "Stop"
W55 Relay for FROST-FREE CONSTANT COLD Systems

MINNEAPOLIS-HONEYWELL Refrigeration Controls

Accent on 'Sevens' In G-E's 1941 Line; Butter Conditioner One of 10 Features

(Concluded from Page 1, Column 1)

meat in the glass cold storage compartment.

Multi-bottle storage for as much as 11 quarts of milk, including half-gallon and gallon containers.

A new conditioner for keeping a pound of butter just soft enough for spreading, through the use of a 3-watt heating element.

High-humidity vegetable storage under glass.

Ten quarts of fresh fruit storage under glass.

Solid stainless steel, tray-type, sliding shelves for general storage.

A new non-refrigerated dry storage space, of more than 27-quart capacity.

'DELUXE SEVEN' FEATURED

Embodying all new features, including fresh exterior styling, the 1941 model B7, or Deluxe, will be the focal point of G-E step-up selling for the year. Wider, higher, and larger than last year's top "six," which it replaces, this model offers a simpler, more massive appearance than have previous designs, with a new nameplate, latch, and base grille. All-steel electrically welded cabinet is finished in Glyptal-baked enamel and rust-proofed, with porcelain interior.

A similar model, PB7, has porcelain exterior finish. New feature is a non-refrigerated dry-storage drawer in the base. Also standard equipment on this model is the butter conditioner, located in the top left corner of the cabinet. The glass-topped fruit and vegetable drawers have been made wider and deeper than in previous models, and to make room for bulk storage they may be stacked on either side without sacrificing their sliding feature.

The air filter, introduced to G-E refrigeration last year, has been relocated vertically between the drawers to take advantage of air-flow in the cabinet. Breaker strips along the door and jambs are of white Textolite, and are held in place by stainless steel screws. Thermometer on the inside of the door has been redesigned, and the "tel-a-frost" indicator has been retained to signal time to defrost. Temperature control is indirectly lighted, as is the entire cabinet interior when door is open.

'STEADY COLD' CONTROL

A new "steady cold" control automatically maintains the temperature within the refrigerator constant even though the room outside may vary as much as 40°, it is claimed. The B7 is powered by a new unit said to have 40% more refrigerating capacity than was the case in last year's deluxe model. Its super-freezer is larger, with four quick trays and a dessert tray, and the super-freezer door has been designed to stay fully open or close automatically. Such standard G-E features as a sealed-in mechanism, forced feed lubrication, flat-plate condenser, and automatic unloader have been retained.

The model BH-7, or "Imperial," in similar styling, is a new 7-foot refrigerator in the 1941 line which also replaces a "six." Interior includes many of the features of the top model, such as white Textolite strips, stainless steel sliding shelves, and two large fruit and vegetable drawers. Super-freezer has a removable shelf, four quick trays, and a dessert tray with grids. A "thriftometer" is mounted on the door liner. This model is equipped with the G-E standard CF2 condensing unit.

FOUR 'SIXES' IN LINE

There are four "sixes" in the 1941 line. The B6, or "Royal," has deluxe exterior features, and in addition a bulk storage drawer such as that in the deluxe line. On the inside is space for nine quart bottles next to the super-freezer, a cold storage drawer, sliding shelves with T-rail fronts, and white plastic shelf supports. Two sliding vegetable drawers may be stacked if desired. New super-freezer has larger frozen storage space than that on previous sixes. This model, with porcelain exterior finish, is designated the PB6.

The "Standard" six, or model JB6, has nine-quart bottle space, side-mounted, super-freezer with newly designed door, Tel-a-frost indicator, four quick trays, multi-purpose cold storage drawer, T-rail shelves with lift-out section, and large sliding vegetable drawer with glass top. It is equipped also with the regular CF2 mechanism.

New G-E price leader, or LB6, has a taller cabinet than in the past, with improved appearance inside and out. Side-mounted evaporator provides more bottle space, and other interior features include new super-freezer door, four quick trays, T-rail shelf fronts, and Tel-a-frost indicator. It is equipped with the CJ2 condensing unit.

The three "eights" in the new line provide another step-up in respect to capacity. Deluxe B8 model has identical styling, performance, and convenience features as the B7, and is available as the PB8 with exterior porcelain finish. Sliding utility basket in both models, an additional feature, is partitioned for eggs and other small articles. Model JB8 is similar to the JB6 except for larger capacity, having the same interior arrangement. This refrigerator also is adaptable for farm use, the two split shelves providing accommodation for a tall cream can or a large basket of eggs.

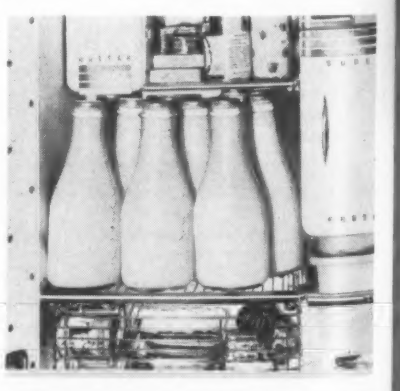
For large families, G-E again offers the PB-12 and PB-16, porcelain-finished models in 12 and 16-cu. ft. sizes, with double super-freezers, storage bins, and cold storage compartments, and with larger condensing units. For apartment-house use primarily there are two "threes" and two "fours" available.

Pacing G-E's Feature Parade

Provision for all types of food storage needs—from frozen foods to dry storage of staples and a special section for butter—are included in this G-E Deluxe "Seven," featured model of the 1941 line.

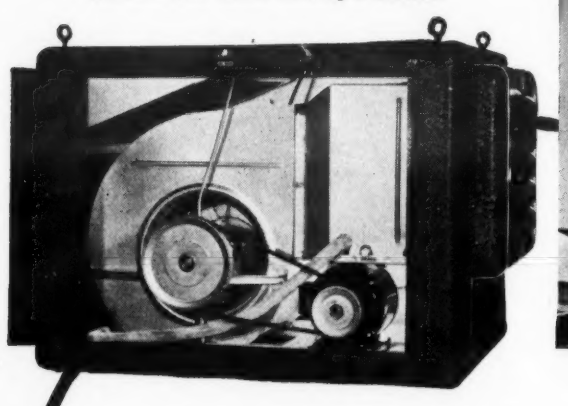
Fruit and vegetable drawers may be stacked atop each other to provide bulk storage space.

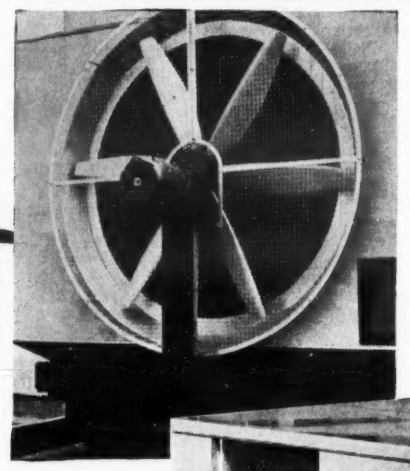
Dry-storage drawer in base may be used as reserve space for beverages and staples.



Butter conditioner has 3-watt heating element to keep contents just right for spreading.

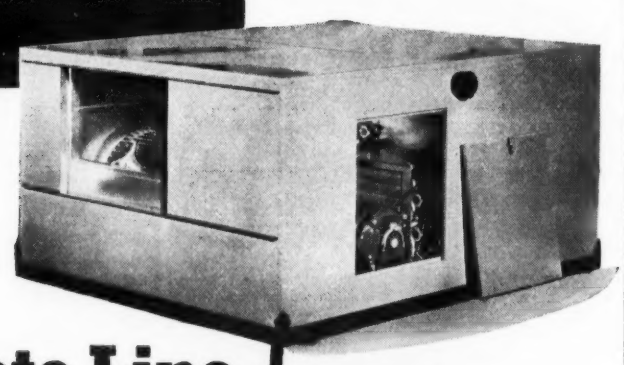
Below—Century Split Phase Cushion Mounted Motor driving a blower.





At left — Century 20 horsepower Splash Proof Motor driving a cooling tower fan.

Below — Century one horsepower Repulsion Start Induction Motor driving a blower on a room cooler.



Century

Offers You a Complete Line of Electric Motors

for better air conditioning and refrigeration performance

Century Cushion Base Capacitor Motor.

☆ The *right* motor is an important part of your sales and manufacturing program. For you can't promise to deliver the most effective, economical performance from your installations unless they are equipped with the correct motor drive.

There are Century Motors to accurately meet the starting, accelerating and operating demands of the various parts of all air conditioning installations — meeting these requirements smoothly, quietly and efficiently. They are available in the widest variety of types and sizes, from fractional to 600 horsepower.

Look to the Century complete line of electric motors to aid you in obtaining top performance from every type of installation—motors that meet the specialized demands of blowers and fans, pumps, refrigeration compressors, unit heaters and coolers, etc.

31 Century Branch offices want to serve you. Permit your Century Motor Specialist to consult with you about your motor problems.

CENTURY ELECTRIC COMPANY
1806 Pine Street St. Louis, Mo.
Offices and Stock Points in Principal Cities.

Century MOTORS

One of the Largest Exclusive Motor Manufacturers in the World

OMCO Refrigeration PARTS

Invite all Canadians at the Convention to visit our salon in the Stevens. MR. RAYMOND BRAULT wants to show you how to save money on your 1941 supplies.

FEDDERS 228T EVAPORATOR with trays & valve, only....$12.95

THERMOSTATIC Controls..$ 4.00
COMPRESSORS .....$ 5.95

Also, many other items at prices beyond competition.

Refreshments for the thirsty.

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ONE DAY SERVICE
IF YOU ARE LOCATED IN Canada

LOOK FOR THE NEON SIGN

ACME PRODUCTS

BOOTH 41—ALL INDUSTRY EXHIBITION

SEE AN UNUSUAL WORKING DEMONSTRATION

MAKE YOUR APPOINTMENTS AT OUR BOOTH
WAITING THERE WILL BE A PLEASURE

ACME INDUSTRIES, INC.
JACKSON MICHIGAN

Steam Ejector Cooling Systems Used in 600 Santa Fe Cars

CHICAGO — Steam ejector air conditioning systems have been installed in more than 600 Santa Fe railroad passenger cars by the Safety Car Heating & Lighting Co., after careful checks of various types of equipment under all weather conditions. The length of run, number and frequency of stops are indispensable information for determination of type of equipment necessary, it was found.

Compressor systems were rejected because of power supply problems occasioned during "stop-overs" at yards and terminals, and excessive maintenance.

Six-ton capacity Carrier steam ejector units, requiring only 190 lbs. of steam per hour, were installed. Steam was taken directly from the locomotive boiler through the steam line which supplies winter heating. It is estimated that it requires about the same amount of steam to cool a car as it does to heat one.

The steam ejector system uses water as a refrigerant, cooling the water by evaporation in a partial vacuum. The boiling point of water is lowered by reduction of air pressure from 212° F. at sea level to 100° F. under 28 inches of vacuum. A vacuum of 29.55 inches is created by the use of a water purge and steam ejector, bringing the boiling point of water down to 50° F.

Water, which has been cooled before leaving the evaporator to 50° F. or lower, is pumped through a coil over which filtered and recirculated air is passed on its way to the car interior.

Smoking is permitted in all day cars on the Santa Fe, and an ingenious arrangement, making use of a large area, fine mesh screen back of the recirculated air grilles instead of 2-inch filters, permits smoke to be carried more rapidly to the plenum chamber.

Cars of the Santa Fe are kept free from smoke and dirt because of a slightly greater air pressure built up inside the car than that which prevails outside, so that any air leakage is outward.

Alex E. Voigt, air conditioning engineer of the Santa Fe road, who supervised experimental tests, found that a major fault of early methods of car ventilation was with exhaust fans which lowered inside air pressure and permitted dust and cinders to be drawn into the car.

AIR CONDITIONED STORE BUILDING PLANNED

CORPUS CHRISTI, Tex.—Provision for air conditioning is included in plans for the building of a new store building here for Lichenstein & Sons. R. J. Cummins of Houston is consulting engineer.

Bimel Co. Appointed York Distributor

CINCINNATI — The Bimel Co., oldest air conditioning dealer in this area, has been made exclusive distributor of York air conditioning and refrigeration lines. Carl Bimel is president of the company. The organization will handle all York products up to 30 tons, and in some cases up to 100 tons.

Mr. Bimel reports that his company will also handle the Philco-York portable room cooler as a distributor.

The Bimel Co. will continue its former policy of handling all installation work and service in the field on products sold by the company. The company also distributes Iron Fireman stokers and Hussmann cases.

Commissioners Consider Cooling Court House

HARRISBURG, Pa.—The advisability of complete air conditioning for the proposed new Dauphin County Courthouse is being considered by county commissioners. Original plans call for the air conditioning of only the top three floors.

Extension of the conditioning equipment throughout the building would add about $100,000 to the cost.

Commissioners were told that to extend the air-treatment facilities to offices on the lower floors would necessitate an increase of several feet to accommodate air ducts.

Gas Engine Job With 'Fluid Drive'

C. S. Hamilton of the motor company which bears his name and S. Y. Guthrie, head of Dallas Air Conditioning Co., discuss the use of a 110-hp. Chrysler Red Top engine to power a 20-ton York air conditioning system which cools the Hamilton Co. showroom. Both men have expressed satisfaction with the success of the job.

* * *

Auto Dealer Uses Cooling System To 'Demonstrate' Chrysler Engine

DALLAS, Tex.—Use of the "fluid drive" mechanism to operate a York air conditioning compressor powered by a Chrysler Red Top engine fired with natural gas, is being used by the C. S. Hamilton Motor Co. and the Dallas Air Conditioning Co. to demonstrate the new mechanical principle. The fluid drive unit replaces the magnetic clutch normally employed for an installation of this type, making it possible to drive a York 20-ton compressor with a 110-hp. Chrysler engine.

Prospects visiting the Hamilton Motor Co. are shown the standard engine, mounted exactly as in an automobile, using the "floating power" principle of three-point suspension, in full operation. Only fundamental change in the motor has been the substitution of a natural gas carburetor.

The idea of combining the demonstration of an automotive engine with an air conditioning system began with C. S. Hamilton, head of the company. Details of the system were worked out by F. L. McFadden, Jr., service and installation engineer, and S. H. Green, staff engineer, of the Dallas Air Conditioning Co.

Conditioned air is supplied to all offices and the company's display room. The motor and compressor units were placed on the shop floor at a point adjacent to the display room. The air conditioning system was enclosed by a waist high metal grille, so that it can be readily seen by prospects visiting the automobile agency.

Heat for the conditioning system, which operates year around, is provided by a gas-fired steam boiler installed on a balcony overlooking the shops. The shops are heated by direct-fired gas furnaces which are separate from the air conditioning system, used to cool the building in summer.

Interest in the installation was stimulated here when Mr. Hamilton invited members of the Salesmanship Club of Dallas to be luncheon guests of the company and inspect the air conditioning system driven by a standard automotive type engine.

Operation of the system is said to be entirely satisfactory, particularly with reference to the use of the "fluid drive" mechanism.

Small Units Dominate N. Y. C. Sales

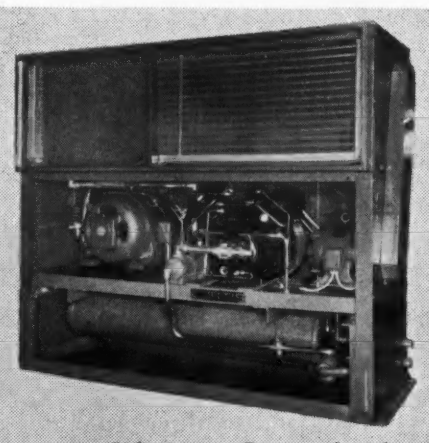
NEW YORK CITY—Installations of air conditioning equipment in the New York metropolitan territory during the first 10 months of this year totaled 1,215 systems, according to reports of dealers to Consolidated Edison Co. Included in the installations were 1,343 self-contained room and store coolers, of which 995 were of 1½-hp. capacity or less and 348 of 2-hp. size or larger.

Offices, practically all of which were equipped with room cooler units, led the installations list with 355, residential jobs were second with 220. Most residential installations also were of the unitary type. Other volume users of air conditioning were restaurants, with 156 jobs, and retail establishments other than department stores, with 135.

Following is a classification of air conditioning installations in the New York metropolitan territory during the first 10 months of the year:

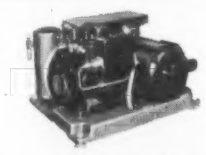
Residential	220
Airport	1
Banks	9
Barber & Beauty Shops	15
Clubs	4
Funeral Parlors	7
Hospital Room	1
Hospital Laboratories	2
Hotel Guest Rooms	13
Hotel Public Rooms	9
Office Buildings	5
Doctors' Offices	53
Miscellaneous Offices	355
Public Building	1
Restaurants	156
Showrooms	47
Department Stores	14
Retail Stores	135
Theaters	21
World's Fair	13
Miscellaneous	77
Candy Manufacturing	14
Food Storage	3
Fur Storage	10
Laboratories	5
Meat Packers	2
Photo Processing	2
Warehouses	4
Bakery	1
Brewery	1
Instrument Manufacturing	1
Miscellaneous Industrial	14
Total	**1,215**

You Can Sell the ENTIRE FIELD of Air Conditioning and Commercial Refrigeration WITH THE Complete CURTIS Line



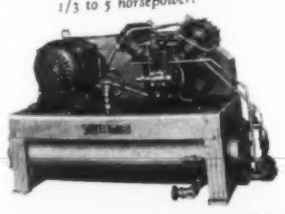
7½, 10, 15 ton Remote or Central Type Air Conditioner.

3 and 5 ton Packaged Type Air Conditioner



1/6 to 1/2 horsepower Self-Contained Condensing Unit

¾ horsepower Water-Cooled (Counterflow) Condensing Unit. Other sizes from 1/3 to 5 horsepower.



15 horsepower Cleanable Shell and Tube Condensing Unit. Other sizes from 3 to 30 horsepower.

The complete Curtis line of Packaged Air Conditioners includes models in 3, 5, 7½, 10 and 15 ton sizes. It enables you to meet all air conditioning requirements of a practically unlimited market — including restaurants, drug stores, taverns, offices, banks, beauty and barber shops and hundreds of other types of establishments. When you sell Curtis Packaged Units you have an unequaled opportunity to profit by the steadily growing demand for this type of comfort cooling.

In the field of commercial refrigeration, Curtis offers 45 air-cooled condensing units from 1/6 to 5 h. p. and 47 water-cooled units from 1/3 to 30 h. p. All models are available for both Freon and Methyl Chloride.

Advanced Design Features of Curtis Condensing Units Include:

- Centro-Ring Positive Pressure Lubrication
- Timken Tapered Roller Bearings (models above ¾ horsepower)
- Removable Cylinder Heads
- Drop Forged, Alloy Steel, Heat Treated Crankshafts and Rods
- Balanced Sylphon Bellows Seal
- Unusually Large Receivers and Condensers

Every unit in the complete Curtis line is built to deliver exceptionally dependable, trouble-free and economical performance — the result of long experience, advanced engineering, precision manufacturing methods and the use of the finest materials throughout. Behind every Curtis product is Curtis' 87 years of successful manufacturing experience and the Curtis tradition of quality.

It will pay you to write for full information on how the complete Curtis line leads to increased sales and profits. It's the "Extra-Value" Line that meets all requirements throughout the entire field.

CURTIS REFRIGERATION AIR CONDITIONING AND COMMERCIAL

CURTIS REFRIGERATING MACHINE COMPANY
Division of Curtis Manufacturing Co. . . . Established 1854
1912 Kienlen Avenue, St. Louis, Missouri

You Are Invited
to visit the Alco Exhibit and to see the New Alco Products
Booths Nos. 113-114
at the All-Industry Show
Chicago, January 13-16

ENGINEERED REFRIGERANT CONTROLS — ALCO — FOR HIGHEST EVAPORATOR EFFICIENCY

Modern 'Snake Charmer' Finds Cooling a Help

NEW YORK CITY—Snakes are "cold-blooded" creatures, but it takes a refrigeration treatment to slow up their fang thrusts, according to Dr. Raymond L. Ditmars, curator at New York Zoological Park.

The possible uses of chilling the reptiles to render them harmless occurred to Dr. Ditmars several months ago when the fangs of a poisonous cobra came within a fraction of an inch of his finger while he was holding it to extract the venom. He based his method on the knowledge that snakes are cold-blooded creatures with a body temperature varying according to that of the air around them.

After his close call with the slippery cobra, Dr. Ditmars put the snake in a wire box and inserted it in one of the zoo's two refrigerators in the veterinarian hospital. Temperature in the box was about 38° F.

The cobra was given a 30-minute cold cure, but it was still able to move quickly. Ten minutes more of the same treatment, however, slowed down the movements of the snake so that it was not able to strike quickly. "I was then able to drape the cobra over my arm like a rope," Dr. Ditmars said.

Later experiments with a rattlesnake showed that pudgier snakes took much longer to put out of commission via the cold treatment. Efforts to chill the rattlesnake into submission took 24 hours.

Reptiles subjected to the chilling process returned to normal activity after being returned to their warm cages. None of the reptiles experimented with suffered any ill effects.

Dr. Ditmars is now engaged in working out a table to show how long different varieties of snakes must be kept in freezing chambers before they become harmless.

Hasn't Missed One Yet

PERRY, N. Y.—Albert R. Watrous, electrical appliance dealer here, has attended 807 consecutive meetings of the Perry Rotary club without a miss.

Helping Solve Uncle Sam's Food Storage Problem

Commercial ice refrigerators for U. S. Army posts roll off the Weber production line at the rate of 60 a day, filling a contract for 1,400 units recently placed by the government. Each unit is capable of handling food requirements for 100 men, and is equipped with a special meat storage compartment.

New Cleveland Company To Do Rebuilding

CLEVELAND—Excel Electric Co. has acquired the business of the Lanese Refrigeration Co., and is now engaged in the rebuilding of household refrigerators for dealers, according to a recent announcement by Howard G. Kraus, vice president and general manager of the company. Under the new set-up, the organization also will distribute the "Deepfreeze" line of refrigeration in northern Ohio, in addition to operating a 12-man service department.

L. M. (Lou) Evans, a veteran of 25 years in the refrigeration industry, is president of the Excel organization. Mr. Evans has been Electrolux distributor in the Cleveland area.

Mr. Kraus is a newcomer to the refrigeration business, having served as sales manager for the Cleveland branch of the Mack Truck Co.

Charles R. Lanese, vice president and service manager, has conducted the Lanese Refrigeration Co. for a number of years. Maurice Singer, an attorney, is treasurer.

The shop force of approximately 12 men will be under the supervision of George Baumgardner, who has been in charge of the motor department of the United Motors Co., Cleveland, for a number of years. Kenneth R. Shadek is in charge of service sales, and A. H. Moss will act as auditor and office manager.

Frozen Foods Show In Chicago Jan. 21-24

CHICAGO—First annual National Quick Frozen Foods Exhibit and Educational Conference will be held Jan. 21-24 at the Auditorium hotel here.

Sponsored by Quick Frozen Foods magazine, this exhibit and conference will feature displays of frozen food packers, supply companies, manufacturers of refrigerating equipment, distributors, brokers, locker plant manufacturers. Educational breakfasts and discussions will cover a variety of topics in the frozen food field.

Another attraction will be a continuous movie depicting all stages of quick frozen food processing and freezing and showing the most up-to-date methods and equipment.

Daily frosted food luncheons will be held in order to provide a centralized meeting place for all persons interested in the frozen foods industry.

Over forty conventions, most of which relate to the food industry, are scheduled to take place in Chicago during the week of Jan. 21, and it is expected that the frozen foods exhibit will draw a large supplementary attendance from these other meetings.

Among the food groups meeting that week are the national canners, wholesale grocers, and food brokers.

Weber Gets Army Order For 1,400 Refrigerators

LOS ANGELES—Weber Showcase & Fixture Co. is completing a $400,000 contract for more than 1,400 mess hall refrigerators recently placed by the government for use in U. S. Army cantonments.

Refrigerators are being built under the contract at the rate of 60 a day, with each refrigerator capable of providing for the requirements of 100 soldiers. Completion of the order is scheduled for the middle of January, and will comprise 93 carloads of equipment.

Exterior of the refrigerators is finished in a combination of white porcelain and Dulux enamel on steel, while interiors are all-porcelain. All units are constructed with special meat compartments, which are equipped with heavy-duty meat racks. Insulation is a combination of Firtex and spun glass.

More than 920,000 lbs. of sheet steel and more than 320,000 board feet of lumber were required for the completion of the contract, reports Karl Weber, president of the refrigerator firm. Eighteen carloads of insulating materials also were used.

The government order has increased the Weber payroll by 120 men, to a total of 550, the company said.

11-Month Cleaner Sales 23% Higher Than 1939

CLEVELAND — Vacuum cleaner sales for November totaled 151,673 units, an increase of 6% over the 142,845 unit sales reported for November, 1939, according to figures compiled by the Vacuum Cleaner Manufacturers Association.

Unit sales for the first 11 months of the year were 1,580,054, a gain of 23% over the 1,280,997 units sold during the corresponding period of last year.

HERE'S YOUR INVITATION TO THE "PROFIT PREVUE OF 1941"

DON'T MISS TUTHILL'S BIG SHOW IN BOOTHS 9 and 10

NEW TUTHILL MONEY-MAKERS:

- NEW 2½ and 5-GALLON FREEZERS
- FAST-SELLING AUTOMATIC FREEZETTE
- NEW AUXILIARY CABINETS

Distributors! This is your invitation to the first showing of Tuthill's new line-up of ice cream freezers and cabinets for 1941,—the equipment geared to today's steadily-increasing market for ice cream, frosted malteds, sherbets, ices, and frosted fruit drinks. Come and get an eyeful of these new sellers that feature amazing advancements and spell buy-appeal and profits for you. It's the money-making line for 1941—don't miss it.

REFRIGERATION PRODUCTS DIVISION
TUTHILL PUMP COMPANY
935 EAST 95th STREET • CHICAGO, ILLINOIS

Distributors • WRITE FOR INFORMATION IF YOU CAN'T ATTEND!

MICHIGAN'S LEADING REFRIGERATION SUPPLY JOBBER

18 years of active service in the industry (6 years with a national refrigerator manufacturer and 12 years as manufacturers representative and/or jobber) has made the name "OBERC" synonymous with "REFRIGERATION" and "SUPPLIES" to Manufacturer, Distributor, Dealer, Contractor and Service Engineer in Detroit and Michigan.

If you need sales representation within our territory, or refrigeration supplies and related devices and controls, may we suggest the services of our concern.

J. M. OBERC, Inc., 904 W. Baltimore Ave., Detroit, Mich.
BRANCH STORE—15021 EAST WARREN

SOLIDS-LIQUIDS-GASES-SOLIDS-LIQUIDS-GASES-SOLIDS DRIERITE

Has Solved Many DRYING PROBLEMS

At the Refrigeration and Air-Conditioning Show — Booth 3
We Expect to Meet Old Friends and Make New Ones

DRIERITE, "The Versatile Desiccant," meets all drying requirements in Laboratory and Plant.

DRIERITE is at present one of the leading driers in the refrigeration industry, and is widely used in the drying of air, the industrial gases, and the organic liquids and solvents in the chemical and engineering industries.

DRIERITE has been adopted for the drying of cable splices in the telephone and telegraph industries, and as the desiccant in a new large-scale process for the dehydration of serums from the frozen state.

DRIERITE serves to maintain dry conditions in storage rooms, vaults, and cabinets. It serves in breathers to protect edible oils and transformer oils. It protects large machine bearings and gears, and various forms of electrical equipment. It preserves delicate materials from tarnish, corrosion, or mildew. It prevents condensation and frosting in the double glazed windows of display cases and railroad cars. It prevents the formation of Gas Hydrates in high pressure natural gas lines. It performs the thousand and one drying operations in institutions, industries, laboratories and plants.

Meet us at the Show or write us.

W. A. HAMMOND DRIERITE COMPANY, Yellow Springs, Ohio

'Do It Right the First Time!'

Or Some Pointers on How To Decrease Refrigeration Service Troubles And Increase Customer Satisfaction By Assuring Both Internal and External Cleanliness In Every System Installed

By A. L. Munson, Westerlin & Campbell Co., Detroit

Perhaps one of the most neglected fundamentals of a refrigeration system is internal and external cleanliness. Most of us have the bad modern habit of making our installations as quickly as possible. "Get it in and running, we've got to get on to so-and-so's job." And then, "We can come back when we're not so busy, clean up, and finish up the fine points."

Seldom do we stop to analyze the extra costs involved in this kind of operation. Why do we have so many seal failures? Why so many expansion valve failures? Why so many call backs? And leaks? And irate customers?

Every commercial refrigeration installation should be provided with a large permanent "dryer"; a large area fine mesh liquid line strainer permanently installed in liquid line as a master strainer; fine mesh strainers immediately before each control valve (these are often a part of the valve); and also a good scale and grit trap in suction line to compressor.

'SURPLUS' EQUIPMENT REDUCES FUTURE TROUBLE

Why all this equipment? Have you ever had expansion valves freeze up? Even a minute particle of moisture in the system will eventually work its way to the expansion valve. It won't often pass this point because of the sudden low temperature which it encounters. It will most often freeze right at the valve orifice, plugging it rather effectively. The coil will not receive any refrigerant, the fixture will not be cold, and as a result, the customer becomes sour—very sour indeed if it happens more than once, particularly in a new installation.

This moisture problem is a very real one and can be very elusive and troublesome if allowed to get out of hand. When confronted with moisture in a system, the average service man will probably add alcohol. Perhaps this is sometimes justified as a quick remedy. It should be frowned upon though as a general practice, since it has a tendency to gum-up a system very effectively. Besides, our system was designed for "Freon" or methyl chloride and will obviously operate more effectively without the dilution of outside agents.

LICK MOISTURE RIGHT AT THE START

Moisture can usually be licked right at the start. Use dehydrated coils exclusively in your systems. Keep your tubing closed at each end until ready to use it. With soft tubing, it is a simple matter to flatten each end of the roll. With hard tubing there are caps provided.

Use reasonable care in making the installation. Try to keep your tubing off wet floors, etc. When the installation is complete, pull a vacuum before charging with refrigerant. If you have taken such simple precautions, and have installed a good "dryer" in the system, you will not encounter much moisture trouble. The dryer will eventually absorb the small amount of moisture that still remains in the system.

The strainer is an important part of the installation. It prevents scale, filings, and foreign matter from getting into the moving parts of your system. The small strainers incorporated in most expansion valves in themselves are not adequate, important though they are.

Unless you provide a large liquid line strainer, these small strainers will clog up quickly and often. I have seen service men remove these small strainers from the system after they have experienced several plug-ups. They always wondered later on why the expansion valves wouldn't work properly. One small piece of grit can make the most expensive expansion valve about as useful as a shut-off valve that is closed.

SCALE TRAP LESSENS TROUBLE WITH SEALS

A good scale trap in the suction line to the compressor will seem to many of you as unnecessary trimmings. But have any of you carefully inspected the surfaces of seals that have become leaky and defective?

In the great majority of cases you will discover that the sealing surface is pitted with minute particles of copper or bronze. And these particles can come only from your copper lines.

Copper filings from file or "Tom Thumb saw," grit or scale from the piping, etc. When the installation is being made, it is nearly impossible to eliminate all such particles from the system. Pipe and fittings are stepped on and knocked around. Fittings have to be thoroughly cleaned. Sometimes a file is used, and always some steel wool. So if we can't keep these particles from getting into the system, we can at least make sure that we take them out again.

STRAINER FELTS MUST BE REMOVED

A good suction line strainer is probably the best and only way to remove these troublesome particles from the system. The particles must pass through the felt to reach the compressor—so they don't reach the compressor. Of course, these felts will become clogged if allowed to remain in the system too long. They will become matted with sludge and oil and must be removed from the system, but by that time, they will have done their good work. Three or four days should be enough, so when you return to the job for final inspection and adjustments, you can remove these felts.

External cleanliness means being tidy about our work, and means leaving the compressor, etc., clean and orderly. It doesn't take long to wipe the oil off the motor and compressor—or even to apply a little paint. And it certainly dresses up our installation so tnat we are just as proud to show it off as the plant owner. And the more the plant is shown off, the more favorable publicity we receive.

It also means hanging our piping in a workmanlike way, with firm, properly spaced hangers, and with neat tags indicating the type of refrigerant, or that the pipe is a water pipe, etc. Mounting the compressor on a firm base or on rubber isolators, etc., helps to dress up our job and dampens compressor noises which are often objectionable. A neat control panel where shut-off valves, strainers, controls, and starters are mounted, doesn't take long to do and is worth the extra effort.

EXTERNAL NEATNESS INVOLVES DETAIL WORK

External neatness also means closing up or puttying up any holes we have made through the floor, ceiling, or fixtures. And the use of streamlined elbows instead of wide irregular bends in soft tubing zig-zagging into and out of the various fixtures, dresses up that end of the installation a great deal. Proper hangers that securely support the coils in a level position, well centered in the space provided.

The use of heat exchangers in each fixture eliminates the ugliness and mess of dripping and discolored lines, while increasing the capacity of each coil sometimes by as much as 10%.

Do You Handle Much 'Winter Servicing'? If So, Here's a Suggested Check List

BUFFALO — A "winter months" service checkover of a refrigeration system should probably have been done in the fall, but nevertheless we offer the following good advice on what to do in making such a check, as outlined by Joe Askin, chief engineer, Fedders Mfg. Co.

In "winter servicing" it is important to oil all motors with a medium grade machine oil. It is particularly important to oil unit cooler motors, as many of them operate 24 hours a day. An oil can with a long, flexible spout is best.

Clean the condensers, because a condenser full of lint and dust may result in high head pressures under certain circumstances.

If the condensing unit is located in a particularly cold spot, a cover in the form of a box should be made for it. The lid should open easily, to permit rapid servicing.

In the winter months the relative humidity is usually pretty low, and there may be a tendency to excessive dehydration in food storage refrigerators. In some cases this may be partly corrected by re-setting the controls, but it may also be a good idea to use humidity pans or a spray nozzle with humidistat control.

The drain pan and drain connections leading from unit coolers should be flushed out.

On water-cooled condensing units, the water valve may be checked and reset, and water lines examined to make certain that they are not likely to freeze.

With a pressure control (a simple pressure control which controls the machine operation by suction pressure only) some advantage may be gained by raising the cut-in and cut-out points slightly for the winter months. The contacts of the controls should be examined and, if necessary, filed smooth with a thin file similar to that used for the contacts of a distributor on an automobile engine.

MUELLER BRASS CO.

RELIEF VALVES

No "blow down"
Equalized spring pressure
Positively guided re-seating
Specially processed seat
Rugged construction
Meets code requirements

The most complete line of low pressure relief valves for refrigeration on the market.

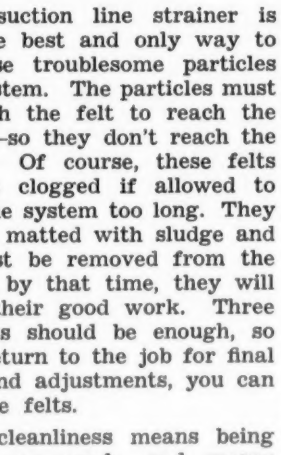
A complete line on display at our booths Nos. 120 and 121, at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

MANHATTAN V-BELTS

Give Steady Service . . . for Fan, Compressor and Pump Drives

Steady, silent, smooth-running MANHATTAN V-Belts deliver lasting service because of their exclusive construction — endless whipcord strength member is in the neutral axis and completely floated in rubber. Resist side wear, stretch and destructive internal heat.



THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
45 Townsend Street Passaic, New Jersey

Ansul EMBARKS ON ITS SECOND QUARTER CENTURY

Since the company's founding day in 1915, the people who are Ansul have never ceased working to better Ansul products and to increase in measure the friendly helpfulness of Ansul service.

While the production men in the factory and the scientists in the laboratory have been everlastingly at the one task, the men in the field, the men who represent Ansul to you, the Ansul Jobbers, have been everlastingly busy at the other.

The sum of their endeavors has made a name unknown twenty-five years ago a name that stands today for genuine fine quality, for friendly and honest service in equal measure.

Now Ansul embarks on its second quarter century.

To the quality of Ansul gases we can certify—as we do by tagging an individual analysis on every cylinder; the quality of the friendly service we can only suggest—and ask that you permit the use of it, by you, to be its own good proof.

There is an Ansul Jobber near you anxious to give you this proof, sincerely eager to serve you better.

ANSUL
SULPHUR DIOXIDE
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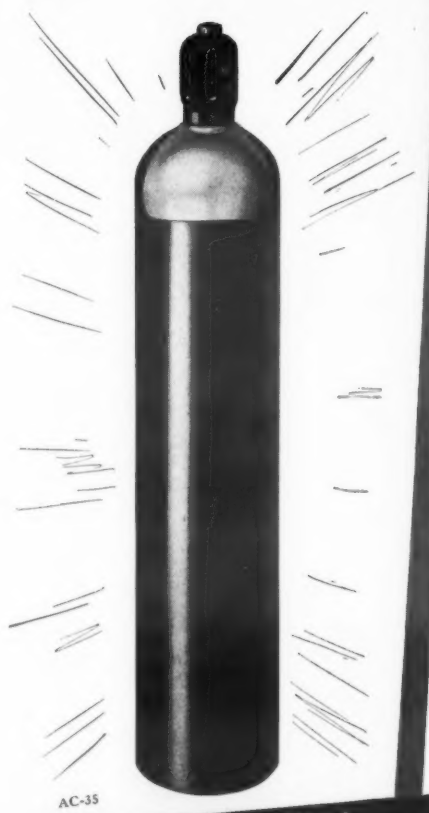

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THIRD ANNUAL ALL-INDUSTRY REFRIGERATION AND AIR-CONDITIONING EXHIBITION
Ansul Will Welcome You at BOOTHS 77-78
STEVENS HOTEL, CHICAGO, JANUARY 13-16

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

Question of the Week

Answered By

F. O. JORDAN, Registered Consulting Engineer, State of Michigan

Hooper, Utah

Editor:

"At this time I would appreciate very much some information on evaporative coolers. These unit window coolers seem to be very popular out here now and I have had several arguments as to their effectiveness. The cooler consists of a fan surrounded by excelsior pads or aspen shavings, over which water drips and the air passes through.

"As I see it, no cooling would actually take place. The wet bulb temperature would be the lowest possible—the heat merely changing from sensible to latent.

"What I would like to know is this:

"(1) If this unit is mounted outside of a window, would some of the moisture-laden air be dissipated to the outside thereby increasing the effective cooling?

"(2) Would tnere be any difference if the unit were just placed in a room—not by a window?

"(3) How much difference would the climatic conditions of the region make; such as, average summer, dry bulb, wet bulb, and relative humidity? (Would evaporative coolers be effective on the Coast?)

"(4) Is there any sort of arrangement by which heat would actually be removed?

"(5) Is there any effective comfort, or would the increased moisture content be depressing? (Making the air clammy?)

"Please send me as much information as possible."

R. M. W.

Answer: If air is circulated through a "spray bank" of water maintained by forcing water through sprays, or is circulated in contact with wet surfaces of considerable extent, the dry-bulb temperature of air will be reduced even though the water is no cooler than the air.

The reason for this is that water is evaporated into moisture vapor which is mixed with the air and carried away with it. The evaporation of water or any other liquid absorbs heat because heat of vaporization is required to change the water from its liquid state into the vapor state.

When air is passed in contact with moisture, the sensible heat necessary to evaporate the water is absorbed from the air so that the dry-bulb temperature of the air is lower. However, the sensible heat is converted into latent heat in the moisture carried away by the air, so that the moisture content or latent heat of the air is increased by the same number of B.t.u. that its sensible heat is reduced. Therefore, the total heat content and the wet-bulb temperature of the air remain the same.

If the outside air is very dry, a considerable reduction in dry-bulb temperature will be obtained, while the final moisture content of the air may not rise high enough to be objectionable. The dry-bulb temperature reduction generally will be about two thirds of the difference between the dry-bulb temperature and the wet-bulb temperature of the air entering the spray bank.

TEMPERATURE REDUCTION

For example, if the dry-bulb temperature is 100° and the wet-bulb temperature is 50°, the dry-bulb temperature reduction will be about two thirds of 100° — 50°, or 33⅓°. Therefore, the dry-bulb temperature of the air leaving the cooler might be 66⅔°.

Of course, this air would feel quite cool in a climate of 100° F., and it probably would not contain enough moisture to make it uncomfortable. In fact, if you will look at any psychrometric chart on which constant comfort or effective temperature lines are drawn, you will see that cooling air along the constant wet-bulb lines as done approximately by the evaporative cooler, will result in a reduction in effective temperature or in increase in comfort. Therefore, an evaporative cooler of this type is fairly satisfactory in very hot dry climates.

A home-made evaporative cooler in which the water surface exposed to the air stream is obtained by allowing water to trickle down over a mat composed of excelsior packed loosely between two screens has been frequently used. The air is drawn through an open window by an electric fan and blown through the wet excelsior and screens, so that the dry-bulb temperature of the air is reduced by the evaporative cooling effect.

COOLER LIMITATIONS

The type of evaporative cooler described above in which the air to be cooled comes in actual contact with the water spray or the wetted surfaces is not useful in damp climates, because the moisture content of the air leaving the cooler is so high that the humidity in the conditioned room soon rises above the level of comfort.

This difficulty may be eliminated by circulating one stream of air through the spray bank to lower its dry-bulb temperature, and by using this stream of cool air to cool a separate stream of air with which it does not actually come in contact.

With this arrangement the dry-bulb temperature of the evaporative cooled air is lowered and its moisture content is raised so that its wet-bulb temperature and total heat content remain the same. This cool damp air is then passed through a passage where it is separated from the air to be conditioned by sheet metal baffles. Here the evaporative cooled air absorbs the heat from the air to be conditioned and is then thrown away.

MOISTURE UNCHANGED

The dry-bulb temperature of the air to be conditioned is lowered because sensible heat is absorbed from it, and its moisture content remains unchanged because it does not come in contact with the spray banks nor with the damp air.

Although the indirect evaporative cooler does not raise the moisture content of the air, it is effective only in rather dry climates because a considerable differential between entering wet and dry bulb is required to result in very much cooling of the air, since the dry-bulb temperature reduction is only a part of the difference between wet and dry-bulb temperatures.

DIFFERENTIAL IMPORTANT

For example, if the unit can obtain a dry-bulb temperature reduction equal to 50% of the difference between the dry and wet-bulb temperatures, the cooler could deliver a dry-bulb temperature reduction of only 5° F. with entering air at 85° F. dry-bulb temperature and 75° F. wet-bulb temperature.

I believe this answers all of your questions except perhaps the first two. I do not see that it would do any good to mount the unit outside of the window and, of course, it should not be merely placed in the room as it would do nothing but recirculate the room air over and over again, and keep raising the humidity of the air until saturation is reached.

With the direct type of evaporative cooler in which the same air is passed over the wet surfaces and supplied to the room, the only effective location is to place it so its supply of air is taken from the outside where the humidity is as low as possible.

Boon For Banqueteers

These eight bonnie lassies are the Dorothy Dorben dancers who will help to entertain convention-goers by appearing in the floor show which will follow the All-Industry Banquet.

New Anemostat Dealer

KANSAS CITY, Mo.—The Leffel Co. will succeed the Disney-Leffel Co. as Kansas City representative of Anemostat Corp. of America.

New Pittsburgh Firm To Handle Carrier Units

PITTSBURGH—Standard Air & Light Co., Inc. has been organized here by A. L. Holdcraft and E. J. Busch to sell both air conditioning and fluorescent lighting.

The partners took over the factory branch of Standard Air Conditioning, Inc., retained the office force and enlarged both the sales force and the scope of activity.

The new concern has an exclusive franchise on the portable equipment of Carrier Corp., including humidifiers and coolers. Dravo Corp. retains the franchise on central-station equipment.

In This Age of Preparedness Has Your Sales Organization Complete Facts on

IDEAL DIRECT DRAW BEER DISPENSERS?

PROVEN FACTS

1. Accepted Nationally.
2. Tops in quality.
3. Unique in design and performance.
4. Not complicated.
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AN IDEAL DIRECT DRAW WILL PAY FOR ITSELF

LA CROSSE NOVELTY BOX MFG. COMPANY

North Liberty St., La Crosse, Wis.

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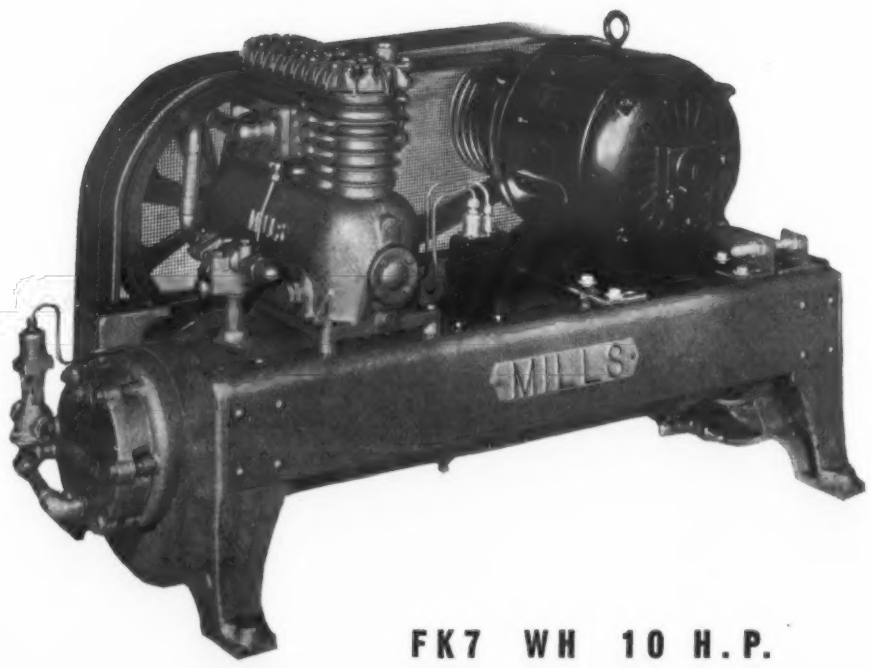

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SEE THE FAMOUS MILLS LINE

AT THE ALL INDUSTRY SHOW

BOOTH 39-40

MILLS NOVELTY COMPANY

Commercial Refrigeration Division

New Frozen Food Cases Introduced By Reol

BALTIMORE—A new line of refrigerated display equipment for the retailing of quick-frozen foods is being introduced by The Reol Co. of this city. The firm has established headquarters in the Hearst Tower building here.

Two models are now on the market, the model 868 "selecto-drawer," the deluxe model in the line, and the model 555 "L-Well," embodying many of the features of the larger model but being slightly smaller and at a lower price.

Design is said to be such that the actual food display and the price bulletin can be taken in at a glance. Both are illuminated by the same central lighting source.

Sliding storage doors and an index and inventory system make the cabinets easy to use, it is claimed. The display compartment is said to be large enough to permit a considerable variety of display.

Styling is in the streamline manner, with rounded corners, paneled table top, and setback base. Designed to harmonize with modern store interiors.

Other design features include free air circulation in the compressor compartment, close control of temperatures, hot hydrolene-treated interlocking sheet insulation throughout, and use of the Reol dead air space principle in the display window.

Contract To Waco Dealer

WACO, Tex.—Contracts for the equipment of a modern frozen foods locker plant at Gatesville, Tex., near here, have been awarded the Air-Con Corp. of Waco, local Carrier distributor.

Cooling Systems Eliminate Troubles From Static Electricity In Commercial Movie Plant

DALLAS, Tex.—The problem of elimination of static electricity as a serious deterrent factor in the processing of commercial motion picture shorts has been solved effectively and economically for National Screen Co., of this city, by use of modern refrigeration equipment.

Installation of the equipment used was made by Air-Rite Corp., Kelvinator commercial dealer, headed by George W. Knight, Jr., and L. E. Adler. It consists of two basic cooling units, one employed for air conditioning processes, the other for refrigerative. There also has been installation of a heating unit, to facilitate the drying of films.

National Screen Co. is engaged in production of motion picture shorts in wide variety. Its product includes not only those of the animated cartoon type, but others prepared for use in Dallas theaters, advertising coming screen attractions. It is, in fact, a motion picture studio.

FAST HANDLING IMPORTANT

Film of the movie type is handled here in thousands of feet; and the element of static electricity has been a most serious one. Its presence was not feared as a source of possible fire, as might be supposed, but as a factor materially contributing to the slowing of processing, and damage to film.

Film passing along in the processing stages became charged with static, causing curling and sticking. The problem is not one seriously encountered in similar studios of California. Climatic conditions in Dallas, however, made it a one of first magnitude.

The installations made by the Air-Rite company provide complete elimination of the static factor, Mr. Knight reports after the equipment has been in service for a considerable period.

The installations are encompassed within an area which can be described as a dark room, since it is wholly employed in the several steps of processing the completed films.

First step after the roll has been completed in the studio section is its transmission into the sound room, there to have whatever music or other sound accompaniment is desired, "installed." In this room there is found an air conditioning unit, which is fed from a ¾-hp. compressor located at the end of a corridor and outside the department. To wholly protect the film from fire danger, a fireproof wall has been built cutting off the dark room from the compressor and motor installations.

In the elimination of static, Mr. Knight says, the control of humidity rather than temperature is the paramount factor. In this plant, humidity of air entering the processing chamber is fixed at 40%.

Entering the sound chamber, this air serves to at once eliminate curl danger, and to provide maximum comfort for workers. From the sound chamber it moves on into the dark room proper, wherein are found the developing tanks, four in number.

One of these tanks is of 420-gallon-an-hour capacity, used exclusively for the rinsing of finished film; another, with capacity of 120 gallons, contains the developer; a second of like size contains the "fix"; and a third the hardening agent.

MAINTAIN 65°

Temperatures in each of these tanks is maintained at the photographically maximum desirable temperature of 65° F. This refrigeration is supplied by a 3-hp. unit, situated adjacent to the conditioning compressor.

The conditioned air entering the sound chamber, Mr. Knight explains, moves on and out of the latter, into the dark room area. Here its temperature is restored to maximum desirable level by its flowing over the tanks of cold water, each of which is furnished with a plate coil.

From the dark room proper, the air feeds on through a door louver into the drying room.

This area is linked by duct with the conditioning unit compressor, with a heating unit installed in the duct. In this manner, the air feeding into the drying machine is capable of being held at temperatures assuring maximum speed and efficiency in accomplishing this phase of the work.

The air which has passed in from the dark room is drawn up through a vent, to join with that furnished by the compressor, and in the process has humidity again restored to the desired 40%.

The drying chamber proper is a glass container permitting the operator to observe all film in process.

Humidity in this variety of work has in the past been a problem which at times seemed insurmountable, and which often virtually halted operations, Mr. Knight says. The application of principles of air conditioning has wholly removed this problem, he asserts.

The Dallas installation has attracted wide attention and material relating to it is being assembled by one of the utilities, Mr. Knight recounts, for purpose of publication in one of the leading electrical journals.

Complete Program For All-Industry Exhibition Week

Monday, Jan. 13

All-Industry Exhibition opens—10 a.m.

Refrigeration Service Engineers Society convention opens—10 a.m.

National Air Conditioning Association convention opens—10 a.m. (Crystal Room, Blackstone hotel)

Jobbers General Luncheon—12:15 p.m. (Grand Ballroom, Stevens)

N.A.C.A. Luncheon—12:30 p.m. (Blackstone hotel)

R.S.E.S. Secretaries' Luncheon—1 p.m.

Tuesday, Jan. 14

National Refrigeration Supply Jobbers Association convention session—9 a.m.

R.S.E.S. convention session—9:30 a.m.

All-Industry Exhibition—10 a.m.

N.A.C.A. Board of Directors—10 a.m. (Blackstone hotel)

N.A.C.A. Luncheon—12:30 p.m. (Blackstone hotel)

N.A.C.A. Forum Meeting—2 p.m. (Blackstone hotel)

American Society of Refrigerating Engineers Sales Conference—2:30 p.m. (South Room, Stevens)

Refrigeration Equipment Manufacturers Association Credit Managers' meeting—3 p.m.

All-Industry Banquet—6:30 p.m. (Grand Ballroom, Stevens hotel)

Wednesday, Jan. 15

N.R.S.J.A. convention session—9 a.m.

R.S.E.S. convention session—9 a.m.

All-Industry Exhibition opens—10 a.m.

Joint N.R.S.J.A.-R.E.M.A. Luncheon—12 noon

Joint Industry Committee on Locker Plants—2:30 p.m. (Blackstone)

R.S.E.S. Party—9 p.m. (North Ballroom, Stevens hotel)

Thursday, Jan. 16

All-Industry Exhibition opens—10 a.m.

All-Industry Exhibitors' Meeting—12:30 p.m.

All-Industry Exhibition closes—4 p.m.

Satisfied Customers
Happy Servicemen
★
ROTARY SEAL UNITS
Rotary Seal Co., Chicago, Ill.

TRADE MARK

REFRIGERATION COPPER TUBING

1 BRIGHT AS GOLD SMOOTH AS GLASS INSIDE AND OUTSIDE

2 JUST RIGHT FOR EASY BENDING AND FLARING

3 ENDS SEALED COILS WRAPPED

4 ALL SIZES FROM 1/8" TO 3/4"

5 IN EXACT 25, 50 OR 100 FT. COILS PLAIN OR ELECTRO TINNED

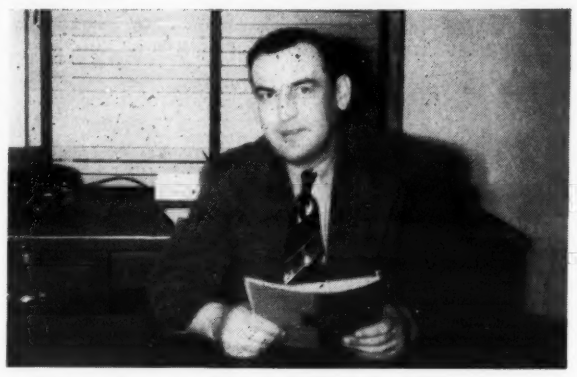
PENN BRASS & COPPER COMPANY, INC.
POWELL AVE., ERIE, PENNA.

IN PLANNING your sales and profit program for 1941, don't overlook Taylor Freezers. More and more are being sold every year. Big and steadily growing market includes confectionery, drug, and grocery stores; restaurants, hotels, schools, hospitals, etc. Thousands of prospects—your customers among them.
Only Taylor has the popular and fast-selling SPEED-EASE model which meets the needs of 85½% of all prospects. And now Taylor introduces its new DuMORE—a complete, compact counter model at a new low price. It's illustrated below.
MORE PROFIT for 1941
Thousands of prospects want a small low-priced unit for frosted malted and other freezer-fresh money-makers. The Taylor Du-MORE is the most compact and efficient freezer available to this market. Now's the time to investigate—right now. So write now for complete information on Taylor Freezers and attractive, money-making distributor proposition. Outline territory desired.
Taylor Freezer • BELOIT, WISCONSIN

DuMORE and other Taylor units will be demonstrated in Booths 316 and 317 at the All-Industry Show. Visit us for information and refreshments.

Success Story

From Basement, To Garage, To a New Building, John Geering Has Built His 24-Man Service Business



Out of a job in 1932, John Geering set out to build his own refrigeration service company. Today he employs 23 people, has his own building, and a customer file of 36,000 names.

* * *

MILWAUKEE — From a jobless mechanic to head of his own thriving refrigeration service organization—that's the essence of the success story which John Geering has spun in the last eight years.

In the fall of 1932 Mr. Geering, then a trained mechanic in the employ of a nationally known refrigeration concern, abruptly found himself among the ranks of the unemployed.

Today Geering Refrigeration & Air Conditioning Service, which does all service work in the Milwaukee area for the firm which fired him back in 1932, is housed in a modern fireproof plant, employs 23 persons, boasts a customer file containing more than 36,000 names, and a parts department said to be the largest of its kind in Wisconsin.

Here's how it all came about.

TIMES WERE TOUGH

After losing his job Mr. Geering spent seven long months in a fruitless search for employment. Ability and ambition seemed to be a drug on the market. Discouraged, he finally sat down to think things through. When he got up again he tightened his belt and set about making his own job.

The Geering refrigeration service business was born and cradled in the basement of the Geering home. A year later it cut its teeth in an automobile garage. In another three years it stepped out of its swaddling clothes and moved into a presentable establishment on a business street. Since then the company's history has been one of steady expansion and frequent moves to larger and more suitable quarters.

IN NEW PLANT

Latest move of the Geering organization was made last fall when it settled itself in a one-story, 6,000-sq. ft. plant at 2840 W. Fond du Lac Ave.

In addition to being the only authorized Frigidaire service representative in Milwaukee, the Geering company also sells and installs Frigidaire commercial equipment, so part of the new plant is devoted to display and sale of these units. In addition, the company operates a parts department said to be the largest of its kind in Wisconsin.

Refrigeration work claims most of the attention of the service staff, but air conditioning is not being neglected. In fact it is a fixed policy of the management to keep abreast of every new development that even remotely comes within its sphere.

HOLDS NIGHT SCHOOLS

In furtherance of this policy a night school is conducted at the plant twice a month during the winter. First meeting of the present season will be devoted to Delco equipment; Stewart-Warner and others will follow. At each session movies are shown and talks are delivered by representatives of leading equipment manufacturers. An open forum discussion and round table talks invariably follow.

Mr. Geering personally directs the activities of his organization. He is assisted in this work by three field supervisors. Mr. Geering himself makes most of the estimates on commercial maintenance work, and the field supervisors make estimates on domestic units which require removal to the shop.

The firm's commercial work, which is rendered on an annual contract basis providing for 24-hour service, includes hotels, apartment buildings, ice cream plants, hospitals, chain food stores, and even lake steamers.

SERVICES STEAMERS

The steamer trade, Mr. Geering explains, requires immediate and expert attention. A steamer needing service radios a message to the dock as it approaches the harbor. This message is relayed to the Geering office (night calls are routed through the Physician's Service Bureau) and trained mechanics are on hand to board the vessel the moment it ties up. Frequently the time in which the service work must be completed is all too short, so only men trained in prompt diagnosis and speedy remedies are assigned to this work.

In point of numbers, domestic calls make up the bulk of the day's routine, but commercial work accounts for about 40% of the firm's total revenue.

Many of Milwaukee's refrigeration dealers and distributors turn all their service work over to the Geering company.

Only recently the firm's field of operations has been widened to include towns within a 60 or 70-mile radius of the city.

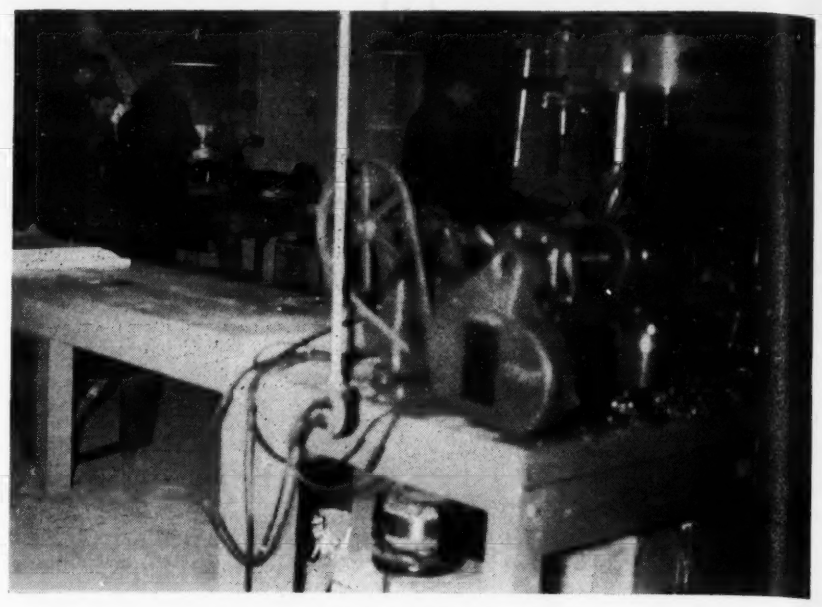
Geering service men use their own private automobiles instead of company cars. This practice has been adopted as a courtesy to the retailers of domestic units who believe that housewives like to feel that their refrigerator is being serviced by the same organization from which they bought it, especially during the guarantee period.

NO LETTERED CARS

Also there are times when a refractory unit may require several adjustments at short intervals, and lettered service cars would advertise this fact to the neighborhood and might reflect adversely on the dealer who sold the unit. Car expense is a major item in the Geering operating budget, averaging $750 per month.

One thing of which Mr. Geering is especially proud is that during his years of business operation he has had to dismiss only one employe. No employe has ever resigned. A reflection of this successful labor record is Mr. Geering's appointment as chairman of the Labor Relations Committee of the Wisconsin Refrigeration Contractor's local.

Machine Shop With Automatic Machines



Lathes, drills, turners, and other automatic machines have a place in the shop of Geering Refrigeration & Air Conditioning Service.

No Time Is Wasted In Going After Parts

Section of the stock room in the service company's establishment. A large stock is kept on hand so that prompt attention can be given to any service call. Note neat shelf construction, and labeling of drawers.

"We'll Show You at the Show that DAVISON'S SILICA GEL IS THE BEST DRYING AGENT THAT YOU CAN BUY"

SEEING IS BELIEVING

SEE for yourself the *proof* of the superior performance of Silica Gel. SEE why Silica Gel has been adopted as standard by most well known manufacturers of refrigeration equipment. SEE SILICA GEL IN ACTION at the Third Annual Refrigeration and Air Conditioning Exhibition.

KEEP THIS IN MIND

The Silica Gel Exhibit and Demonstration will be at BOOTHS 47-48. Come and see us—we promise that your visit will be interesting and instructive.

THE DAVISON CHEMICAL CORPORATION
Silica Gel Department
BALTIMORE, MARYLAND

STREAMLINE "SOLDER SEALED" HARD COPPER TUBING

STREAMLINE "Solder Sealed" copper tubing for refrigeration purposes is free from all dust and foreign matter. It is carefully dried and remains in prime condition until required for installation.

Each end of the pipe length is positively sealed by a soldered copper cap which amply protects the ends of the pipe from damage, and helps to preserve the capillary tolerance of the pipe.

The Mueller Brass Co. dehydrated copper tubing is furnished in 25, 50 and 100 ft. coils, and diameters from 1/8" to 3/4" inclusive with .035 wall. Types are indicated by colored caps —Type K—Green—Type L—Copper —Type M—Red.

Our complete line is on display at booths Nos. 120 and 121 at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

AC AUBURN CENTRAL

a message to MANUFACTURERS

WE take this opportunity to thank the many important Refrigerator Manufacturers who have given us the privilege of producing metal stampings for their products . . . in most instances full assemblies. We also appreciate the additional business already placed by them for the year nineteen forty one.

TO those of you who do not know our facilities and equipment, may we suggest you allow us requests for bid, or at least secure further particulars as to how we might help solve your production problems. Full attention of our engineering, tool, pattern and production divisions will provide you immediate and satisfactory answers.

AUBURN CENTRAL MANUFACTURING CORP.
CONNERSVILLE, INDIANA

Advertising Comes To Life

Lovely Beatrice Blaxton steps out of her role as a model in this blow-up of one of Crosley's national magazine advertisements to greet L. Martin Krautter, advertising manager, during the recent 1941 distributor convention in Cincinnati. "Twice as much food to the front" is Crosley's advertising theme for the year.

Home Stoker Sales Show Steady Gain

WASHINGTON, D. C.—Mechanical stokers, parts, and attachments produced in the United States in 1939 had a total value at the factory of $22,559,501, according to a preliminary compilation of returns from the 1939 Census of Manufactures.

Residential stokers accounted for $11,651,499 of the total. Of this amount, $10,649,580 represents the value of 95,754 stokers, reported by kinds. This compares with 86,045 residential stokers reported in 1937 as having a factory value of $11,922,250.

Commercial and industrial stokers produced last year had a factory value totaling $7,783,439. Of this sum, 8,943 stokers reported by number accounted for $7,312,751. In 1937, there were reported 14,098 commercial and industrial stokers having a value of $9,701,966. Total value of all such stokers produced in 1937 was $10,168,430.

Number of establishments in the industry increased from 50 in 1937 to 61 during 1939.

Dealer Nearly Scores Double With Display

MANNING, S. C.—Ed McLeod, local General Electric dealer who last year took top honors at the Clarendon County Fair for his display of electrical appliances, nearly scored a double when his display was rated second high this year.

Planning Gale's 'Biggest Year'

Looking forward to 1941 as Gale Products' biggest year in the household refrigeration field are C. P. Rossberg (left), general manager, and L. H. D. (Lee) Baker, sales manager, shown here reviewing the features of one of the deluxe "sixes" in the company's 1941 line. More orders already have been booked by the company this year than had been received by the end of the first quarter of last year, Mr. Baker reports. Both he and Mr. Rossberg regard the outlook for 1941 as extremely favorable, both industry-wide and for the company.

Models in Gale's 1941 series incorporate such convenience features as sliding shelves, meat storage compartment, sliding glass-top crispers, dairy products storage basket, and two-door evaporator for convenience in storing frozen foods and ice cream. Engineering features include a new fluid-cooled static condenser which is said to cool during the "off" cycle, and improved equalizer. All units are hermetically sealed, and use "Freon" as the refrigerant. However, the models may still be obtained with open-type units, if desired.

Twice-A-Year Canvass by 'Junior' Salesmen Doubles Sales For Kelvinator Dealership

By Henry Knowlton

ERIE, Pa. — House-to-house canvassing of the entire city of Erie by a crew of "junior" salesmen twice during the past year has doubled the Winter Co.'s volume on Kelvinator refrigerators, according to Robert R. Brown, refrigeration manager for the company. Employing all of the well known techniques of specialty selling, Mr. Brown uses morning meetings, "door-openers," special promotions, and "senior" salesmen to close leads developed by the 10 junior men.

According to Mr. Brown, the sales plan has been highly successful—the salesmen made money, and many of the juniors graduated to the senior classification. Senior salesmen with the Winter Co. operate on a drawing account against a 10% commission, which is split 50-50 with the junior salesmen on leads originated by direct canvassing.

Junior salesmen were secured through classified advertisements in local newspapers reading: "opportunity for young salesmen. Men who qualify will become eligible for a drawing account, apply the Winter Co." These men were given training in the Kelvinator selling story, and were also equipped with cards carrying the name and address of all residents of their territory. Under the plan, the salesman had nothing to do except secure information about the appliances in use in the prospect's home and determine the prospect's immediate interest in a refrigerator, range, or radio.

One of the best promotions ever used by the Winter organization as a "door-opener" and sales stimulator was a "treasure chest" plan carried out last year. Junior salesmen calling from house to house gave each prospect a key which carried a tag. The tag advised the housewife that if her key would fit the "treasure chest" on display in the Winter store, she would be awarded a prize. Prizes consisted of radios, small appliances, ash trays, and other household articles.

Many household refrigerators marketed by the Winter Co. are sold on the meter plan—no down payment, and 24 months to pay. Mr. Brown asserts that over 40% of the business handled was from $169.50 up, and that "less than 1%" of the deals were in the "special" class. None of the lowest price models were sold by dealers, who refused to handle these units.

In addition to the large retail operation conducted in Erie, the Winter Co. has a structure of 35 dealers covering five counties in northwestern Pennsylvania. W. W. Willow is in charge of wholesale sales for the company.

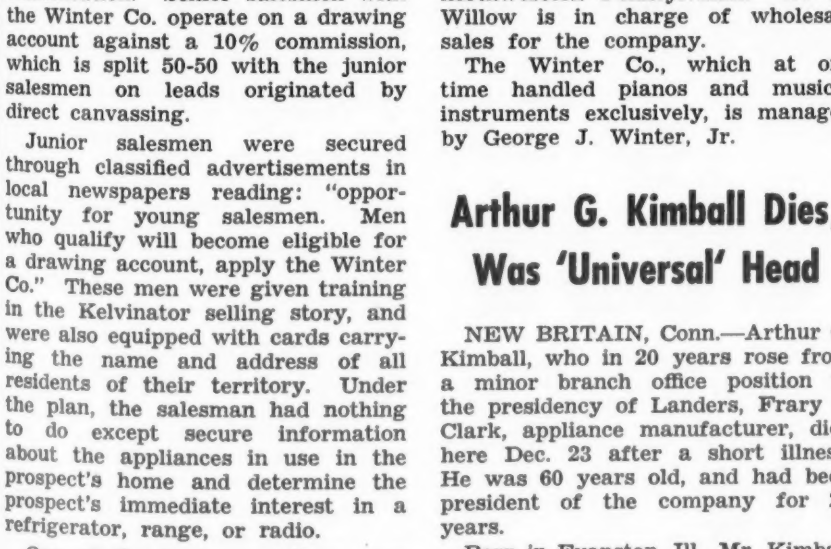
The Winter Co., which at one time handled pianos and musical instruments exclusively, is managed by George J. Winter, Jr.

Arthur G. Kimball Dies; Was 'Universal' Head

NEW BRITAIN, Conn.—Arthur G. Kimball, who in 20 years rose from a minor branch office position to the presidency of Landers, Frary & Clark, appliance manufacturer, died here Dec. 23 after a short illness. He was 60 years old, and had been president of the company for 22 years.

Born in Evanston, Ill., Mr. Kimball entered the Chicago office of Landers, Frary & Clark at the age of 18, remaining there until 1905, when he joined the company sales organization in the Missouri area. In 1909 he was transferred to the sales department at the home office here.

In 1911 he was made assistant secretary of the company, and the following year became vice president.



No.1 OF A SERIES OF ADVERTISEMENTS DESIGNED TO HELP YOU SELL REFRIGERATORS FASTER

KNOW YOUR STREAMLINING!

IT ADDS POWER TO YOUR SALES TALKS WITH TODAY'S STREAMLINE-MINDED PROSPECTS!

IT'S an important thing to be "up" on. For practically everything new today is as streamlined as ingenious design can make it . . . whether it's a locomotive, automobile or refrigerator.

So you can get a prospect's quick interest by pointing out streamlined design; by knowing how the manufacturer selected the design after careful study and selection of many preliminary designs; why the design of the refrigerator you're demonstrating is most suitable for her needs.

Hand in hand with knowledge of design goes a knowledge of the finish. Dealers all over the country admit that women invariably ask, "What kind is this finish?" "Is it easy to clean?" "Does it chip?" "Does it show food and grease stains?" "Will it *stay* white?"

Right here DULUX proves its ability to clinch sales. For this brilliantly white, easy-to-clean finish is a prime favorite with women. It is resistant to chipping, cracking, food and grease stains. It's as easy to clean as a china dish. It saves work. Its "made by Du Pont" reputation means "Quality PLUS" to housewives everywhere.

Put DULUX to work for you. Use it to help you sell refrigerators faster! E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

FREE... SEND FOR THIS BOOK!

▶ Du Pont has prepared a new book to help you in your sales. It's called "How DULUX Has Helped in the Sale of More Than 9,000,000 Refrigerators." It's yours for the asking. Just write to: Du Pont Co., Room 7156, Du Pont Bldg., Wilmington, Delaware.

DU PONT REG. U.S. PAT. OFF. DULUX FINISH ON EXTERIOR

DULUX REG. U.S. PAT. OFF. DU PONT REG. U.S. PAT. OFF.

THE MODERN FINISH FOR MODERN LIVING...*It saves work*

The Enduring Metal-

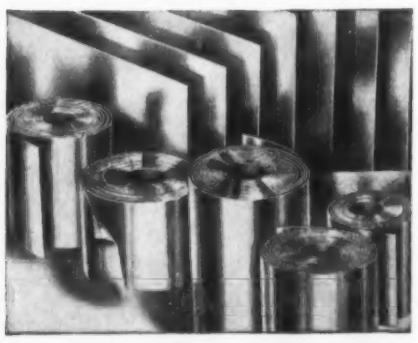
FOR ALL AIR CONDITIONING JOBS

HUSSEY

PURE LAKE COPPER

Thousands of years ago Indians found solid deposits of pure copper in the Great Lakes regions and beat it into many useful forms. Since unearthed, these ancient forms reveal the remarkable immunity of Nature's own copper to corrosion. Because Hussey Pure Lake Copper comes from the same pure Great Lake deposits, the working and corrosion-resisting qualities of Hussey are unique—one of the big reasons why Hussey Copper is so widely preferred in the air conditioning industry today. You will find it remarkably easy to work, shape and bend. Try Hussey on your next job.

C. G. HUSSEY & CO.
(Division of Copper Range Co.)
Rolling Mills and General Offices:
PITTSBURGH, PA.
Warehouses in Principal Cities



New Compound Claimed To Restore Finishes

DETROIT—A new white reconditioning compound, designed for restoring, reconditioning, and protecting enamel, porcelain, metal, lacquer, and plated finishes, has been developed by Formax Mfg. Co. for use by refrigeration and other appliance dealers.

The new 4-MAX Reconditioning Compound serves four uses, it is claimed. It removes blemishes, scratches, stains, marks, and rust; blends the disfigured surface area evenly into the surrounding finish; leaves a smooth, clean, fully restored finish; and waxes the entire surface to a high luster.

The compound may be used both for new finishes that have been marred or disfigured in shipment or during installation, or for the restoring of old finishes. It can be used on either porcelain or lacquer surfaces.

Browne Named Columbus 'Deepfreeze' Dealer

COLUMBUS, Ohio—The K. C. Browne specialty sales organization has been named exclusive downtown dealer here for the Deepfreeze storage unit for frozen foods.

Two men will handle the sales work on a direct basis to homes. Units will be stocked and displayed at the firm's offices at 35 E. Gay St. Initial promotion for the line consisted of selected direct mailings followed up by a telephone campaign.

The deal with the Browne organization was arranged by B. Starling Manley of Starling Distributing Service, which holds a 36-county franchise for Motor Products Corp., Deepfreeze manufacturer.

The Browne company represents a number of types of products including suction cleaners for industrial uses, automotive products, sheet metal items, and cleaning compounds.

Diagnosing Troubles Caused By Moisture In Capillary Tubes

By G. C. Murphree and F. J. Allen
Refrigeration Maintenance Corp. of Michigan

There still seems to be a great deal of confusion among service men in servicing domestic refrigerators employing a capillary line. These jobs are sometimes referred to as "balanced systems," due to the fact that the gas in the system equalizes between the high and low sides by means of the capillary line during the off cycle.

This action frequently causes a gurgling sound in the evaporator which must be explained to the user as a normal function of the refrigerator.

On "Freon" jobs particularly, the old bugaboo of moisture crops up to confuse the service man. It seems quite difficult to differentiate between a moisture condition and a job low on refrigerant.

Where there is a presence of moisture it usually appears in the capillary tube, preventing the flow of refrigerant from the evaporator. The compressor draws the balance of refrigerant into the evaporator, causing a high suction and head pressure. This varies from other types of systems using float and expansion valves, where a moisture condition usually results in a low suction pressure.

In order to correct the moisture condition in a capillary or balanced system the following steps should be taken:

1—Discharge the entire system.
2—Draw a vacuum on the system by applying heat to the evaporator and condenser.
3—Install a new dehydrator.
4—Replace the compressor oil.
5—Add new charge of refrigerant.

Care should be exercised in adding the proper amount of refrigerant to insure efficient operation of the machine. Too much refrigerant will cause the suction line to sweat or frost.

On many balanced jobs the manufacturer has used split-phase motors with thermal overload motor protection. In the event that this type of system is shut off and then started up again before the refrigerant has balanced, the thermal overload device will cut the motor out. When the equalizing is complete the motor will automatically cut in again.

DESIGNED for the Manufacturer of Refrigeration Equipment who wishes to complete his line with a popular model Water Cooler . . . and for the Distributor of Water-Cooling and Filtering Service.

•

See the new "Day & Night" Model DU 0-1 at the Refrigeration Show . . . and other models, shown for the first time. See the cut-away model, showing the many exclusive "Day & Night" Features.

ON DISPLAY AT BOOTH 84, STEVENS HOTEL

DAY AND NIGHT
COOLER DIVISION
DAY AND NIGHT MANUFACTURING CO.
2320 EAST EIGHTH STREET • LOS ANGELES, CALIFORNIA
Warehouse Stocks at Convenient Shipping Points

Skyliner Beauties To Appear In Person

NILES, Mich.—To assist in impressing visitors to the Third All-Industry Exhibition in Chicago next week with its 1941 slogan, "Skyscraper Strength—Skyliner Beauty," Tyler Fixture Corp. has arranged to have several "skyliner beauties" in attendance at its display as "secondary attractions" to the line of 1941 Tyler commercial equipment that will be on exhibit.

These "skyliner beauties" will be regular airline hostesses, who will appear at various times during the Exhibition through arrangements which Tyler has made with American Airlines in Chicago. This method, the company believes, will get across to Show visitors in a vivid manner just what the 1941 slogan is designed to convey.

John Bush Again Heads N. Y. Service Society

ALBANY, N. Y.—John K. Bush of Buffalo was re-elected president of the New York State Association Refrigeration Service Engineers Society at the first annual convention here recently. Other officers for the coming year are:

First vice president, George B. Gardner, Schenectady; second vice president, Eugene W. Phillips, Rockaway Beach; secretary, E. E. Condon, Flushing; treasurer, Ralph D. Davis, Buffalo; sergeant-at-arms, Paul D. Cross, Syracuse.

New York City was selected as the site for the second annual conclave in October, 1941.

Nicholas Campbell Dies

LITTLE ROCK, Ark.—Nicholas W. Campbell, 64, secretary-treasurer of Arkansas Electric Co. for more than 40 years, died recently in a Little Rock hospital.

Miss Margaret Blanchard Killed In Auto Crash

Margaret Blanchard, well-known to many former All-Industry Exhibition goers as one of the hostesses at the Virginia Smelting Co. booth, will be missing this year. Miss Blanchard was killed instantly Nov. 22 in a tragic auto accident on Virginia state highway 460.

Miss Blanchard and a companion had been visiting some friends out of the state and on the long drive home her companion, who was driving, apparently dozed off while at the wheel, it was believed. The automobile crashed into a tree.

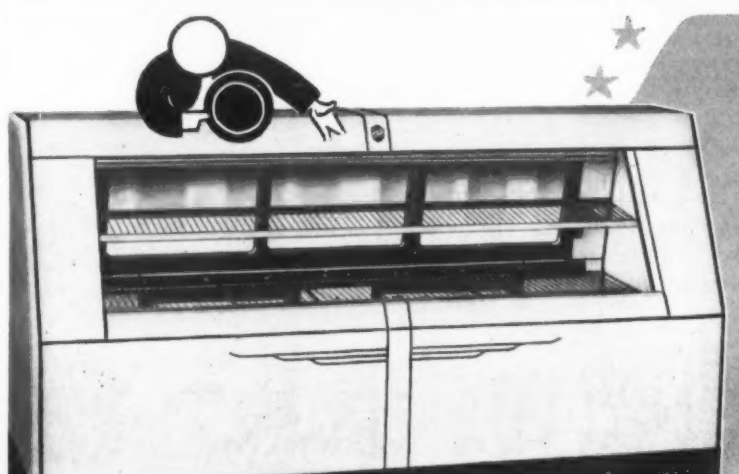
She had been an employe of the Virginia Smelting Co. for seven years, and won a great many friends in the industry both through her participation in the Virginia exhibit at the All-Industry Exhibition and through the acquaintanceship she made with members of the trade who visited the company's headquarters in Norfolk, Va. She was 25 years old and made her home in West Norfolk.

Trescott Leaves Page-Williamson For Year's Army Service

CHARLOTTE, N. C.—J. H. Trescott, who has been associated with the industrial department of Page-Williamson, Inc., has been granted a year's leave of absence to serve as a lieutenant-colonel in the U. S. Army. While Mr. Trescott is away his duties will be assumed by C. W. Hallenbeck.

Riddle Moves Over To Refrigeration Supply Co.

DALLAS, Tex.—Floyd P. Riddle, formerly associated with the sales staff of McKinley Refrigeration Supply Co. of Fort Worth has joined the staff of Refrigeration Supply Co. of this city.



YOU CAN CASH IN ON THESE
Sensational
DISPLAY CASE VALUES

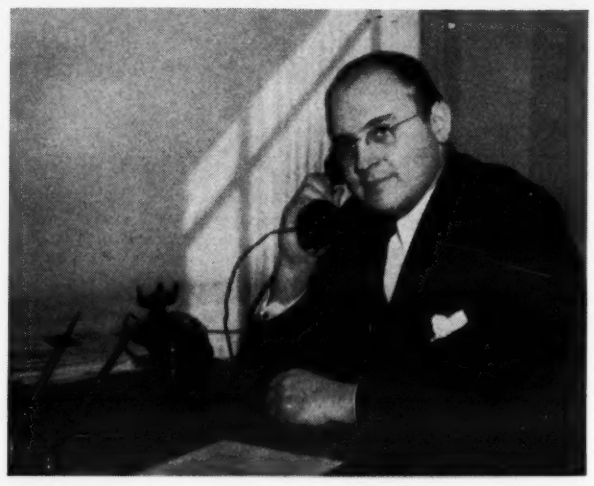
Now—with Midwest's volume production *again* expanded—prices are arranged to make these beautiful, quality-built display cases greater values than ever! That means they're even *easier* to sell! Two lines—all-porcelain DeLuxe line and Leader line with Dulux exterior—fill every need. Write at once for full details.

Midwest
MFG. COMPANY • GALESBURG, ILLINOIS
EXPORT DIVISION, MERCHANDISE MART, CHICAGO

"If it's Midwest-built, it's better built"

Selling 'Through the Dealer' Rather Than 'To the Dealer'

The Function of the Wholesale Salesman



H. M. Butzloff, author of this series of articles, is central sales manager for Norge. Before that he had many years of experience in the field distribution end of the household electric refrigeration business, with Westinghouse, and with the old Stover Co., original Frigidaire distributor in the Chicago area.

With the introduction of new lines of household refrigerators and other major appliances, the wholesale or distributor's salesman begins a new year. This series of articles, by a man well-known in appliance sales work, is aimed to give the wholesale salesman some pointers on how to do a better job.

By H. M. Butzloff

Selling Ideas, Not Merchandise

Last fall, in the office of a chain furniture store, occurred an incident which illustrates how a salesman sold himself.

The purchasing agent of this furniture company came into the office of the general manager and asked him if there was any reason why they should not give "A" the order for several cars of bedroom furniture. The general manager asked "What is 'B's' price?"

"Two dollars and fifty cents a suite higher," replied the purchasing agent.

"Give the order to 'B,' then," the general manager ordered.

After he left, the general manager explained.

"You probably wonder why I gave the order to 'B,' when I could have saved $2.50 per suite buying it from 'A.' I bought it because the salesman for 'B' hardly ever comes in without bringing in an idea that helps me sell more furniture."

Sales talk is cheap, but ideas are worth money.

How then, can you help develop a dealer?

I believe you can develop him by understanding the fundamentals governing that dealer's success. All the basic fundamentals of good business practice that have made successful merchants in hardware, furniture, or department stores apply equally as well in the merchandising of appliances.

I believe that most merchants would subscribe to the following fundamentals as good business practices, and a salesman who has an understanding of them of course cannot help but develop business and win the confidence of the dealer.

Know the Dealers' Business

1. STOCKS AND INVENTORIES

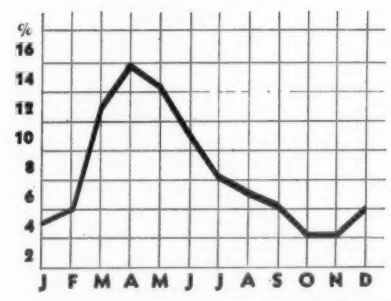
It is important that the retailer have stock on his floor to show, demonstrate, and sell. It is necessary that it be of the right kind, that he have enough to make prompt deliveries, and yet not be overstocked.

Careful counsel with a dealer on stocks and inventories to arrive at a balance of good sound business will more nearly lay a foundation of goodwill than any other advice you can give him. The day for high-pressure selling is past. Overloading and pushing the wrong numbers may lose more confidence than months of good selling can build back.

Here are some of the fundamentals of stocks and inventories to watch:

a. Seasonal trends must be taken into consideration in advising a dealer about his stock. A chart showing the percentage of a year's volume that can be reasonably expected in any month of the year is a first essential. Sixteen per cent in April. His expectancy is 100% for the year, or 16% for the month. Will he stock to sell 16 or 5%. (See Chart 1.)

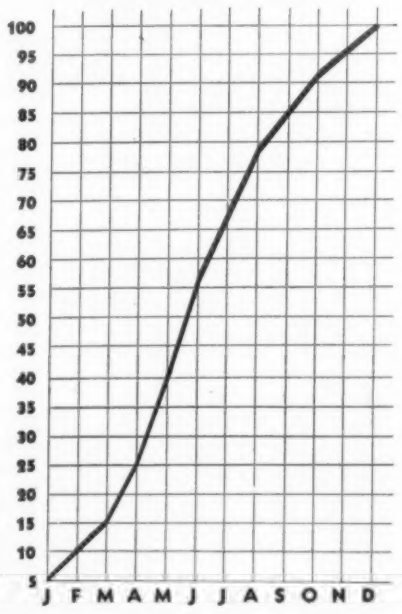
Chart 1—Monthly Sales Trend



b. **Projected year's business.** Outline a plan on the basis of a year's accomplishment and follow a dealer through on the quota attained. Working for a sound objective will help the dealer perform. A knowledge of the progress as compared to a national or district average will easily help you to point the way for the dealer. (See Chart 2.)

A chart showing the cumulative percentages can be helpful. For example, if at the end of June he should have done 57% of the year's objective and only 45% has been accomplished, ways and means should be devised to pick up the lost ground.

Chart 2—Cumulative Sales For Year



Charts 3 and 4—Sales By Sizes and Models

c. **Sales by sizes.** A knowledge of how the models are moving by sizes, as shown in Chart 3, should be at one's finger tips. Not guesswork, but facts.

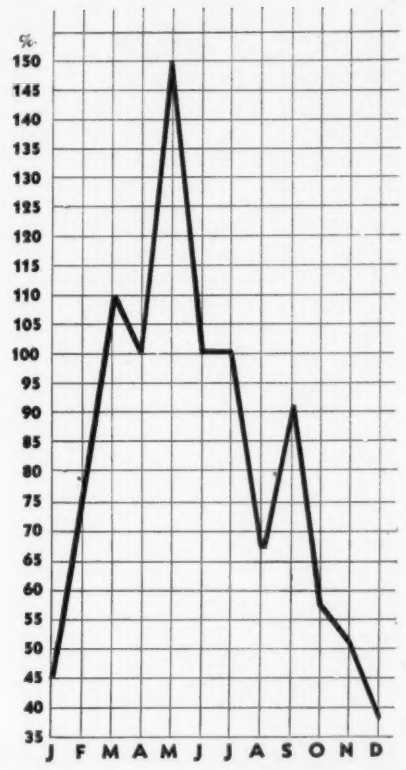
d. **Sales by models or lines.** You cannot guide a retailer soundly if you attempt to sell him some pet model or a higher priced one just because you make more money on it. You can educate a dealer to sell higher priced merchandise, but merely to sell him a bill of goods without due thought as to how quickly he can move it from his floor, is to openly invite loss of confidence on the part of the dealer. (Chart No. 4 shows how this can be done.)

e. **Turnover.** The important thing to remember is that "you can't sell 'em unless you have 'em." Your volume and turnover desired will determine the sizes of the reserve stocks necessary.

Chart No. 5 shows how this problem might be analyzed. In the good months of April, May, and June, the refrigerator turnover is relatively high, and stocks may be more readily bought in anticipation of sales than in other months.

A good wholesale salesman should study each account for a yearly turnover figure and call it to the attention of the retailer. It may answer the criticism that the retailer is not making enough money from the business, for a good fast turnover on a large dollar item like a refrigerator may prove to be a more profitable item to handle than a slow-moving line of merchandise at a lower net sales ticket.

Chart 5—Per Cent of Inventory Turnover Per Month



f. **Financing.** An understanding of the financing plans available, together with the dealer's banking credit, will enable you to make the dealer more flexible, to carry a more adequate display stock, and enjoy a much more profitable operation.

The Machine For Your Next Job...
If it's a refrigeration job no matter how big or how small...we can supply Lipman equipment to fit the specifications. Let us work with you.
GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-3, Beloit, Wis.
Model 153 Water-cooled Machine
Lipman

A SALES FEATURE
EVERY PROSPECT UNDERSTANDS
BONDERIZING

● Prospects for household equipment appreciate the value of rust proofing. All know the effectiveness of Bonderizing. They have read about it in national magazines—have seen how it protects their automobiles—how it keeps refrigerators and washing machines looking bright and clean—how it holds the enamel and prevents chipping.

If the refrigerator, washing machine, ironer, or other equipment you sell is Bonderized, you can make this feature make sales. It is most important to the continued satisfaction of your customers. Tell them about it. They will appreciate it. It is one of those things that helps make friends and good customers.

Send for this Book

It includes everything the salesman should know about Bonderizing — how it is applied — why it holds the finish — why it prevents rust.

PARKER RUST PROOF COMPANY • 2197 E. Milwaukee Ave. • Detroit, Michigan

PARKER *Processes* CONQUER RUST
BONDERIZING • PARKERIZING

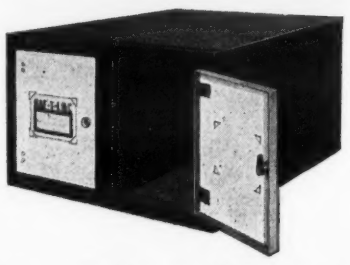
Master Introduces 'Two-In-One' Locker

SIOUX CITY, Iowa—"Two-in-One" is the name—and also an apt description—of the new "convertible" locker unit added by Master Refrigerated Locker Systems, Inc. to its "Saf-T-Loc" line.

Designed to satisfy the needs of the patron who desires refrigerated storage facilities but who does not wish to rent a regular-sized locker, the "2-in-1" is really a full-sized 15 x 24 x 30-inch locker which can be divided by a removable partition into two compartments measuring 15 x 12 x 30 inches in size.

Every "2-in-1" locker has two doors and two keys, so that each compartment is just as private and inaccessible to others as a single locker. The partition may be removed to make one regular-sized locker whenever desired.

It is felt by Master officials that this new locker offers the locker owner an entirely new merchandising angle, inasmuch as he can use this half-size locker as a promotional feature either for new customers or for present patrons who need a little extra locker space.



A removable partition in the center divides this locker into two separate compartments.

Kentucky's First Locker Plant Is At Glasgow

GLASGOW, Ky. — First locker plant in Kentucky was the distinction of the one built here for J. P. Gray & Son. E. D. Smathers of Smith Distributing Co., Frigidaire distributor in Louisville, Ky., made the sale.

Installed in a new building erected especially for this purpose, the plant was equipped with 400 Master "Vapor-Loc" lockers. Frigidaire refrigeration equipment was used in conjunction with Doleco plates. Palco insulation was employed.

Knoxville Locker Firm Stages 'Open House'

KNOXVILLE, Tenn. — Frozen Products Corp. celebrated the recent opening of its frozen food and locker storage plant, first institution of its kind in Knoxville, by staging a week-long open house for the public. This plant will provide a wholesale and retail frozen food service, as well as the usual frozen food locker storage facilities.

Officials of the firm announced that frozen food delivery service to hotels, boarding houses, and restaurants would begin early in December. The plant is refrigerated by Frigidaire equipment.

New Washington Plant

ENTIAT, Wash. — J. L. Phipps has opened a 175-locker food storage plant adjacent his meat market here.

Mississippi Locker Plant Operators Fight Game Storage Restrictions

MERIDIAN, Miss.—Locker plant operators throughout this region are banding together in an attempt to find a workable solution to the problem of federal government restriction as to the number of game girds which hunters may store in their plants after a few days of duck hunting.

What looked to be a wide-open market for locker service with the opening of the 1940 duck season exploded when it was found that the migratory bird statute, which prevents the hunter from keeping his kill for more than 10 days following the date of the hunting trip, absolutely forbade quick-freezing and keeping of the birds.

The old law, it is pointed out, was inaugurated primarily as a means of preventing commercial sale of the birds, and works an undeserved hardship on the hunter who must give away his kill in order to keep within game laws.

One locker plant owner has taken the case to the state game commission, stating that he turned away more than 50 hunters after explaining that compliance with their requests would make him liable for a heavy fine.

Locker plant owners in upper Mississippi and Tennessee have adopted the practice of taking from each hunter depositing ducks an affidavit to the effect that the birds were shot within legal limitations. They also are including the license number of the hunter. They are demanding one affidavit for each 20 birds in the plant, as legal limitations provide that the hunter may not have more than 20 birds in his locker at one time.

Pointed out to the federal game commission is the fact that the law saps the locker plant industry of a highly profitable though short season business; prevents the hunter from preserving his trophies for any length of time; and, finally, is discriminatory against a new business on a highly ethical plane.

It Pays (10 Cents) To Visit Laughlin's Locker Plant; Only Groups Allowed

ASTORIA, Ore.—Paying visitors to his plant a dime apiece just for looking the place over is one of the clever promotional stunts being used by Lyle Laughlin to promote his locker storage business here.

"This offer is not made to individuals," Mr. Laughlin hastens to explain. "It applies only to members of civic groups, women's clubs, church societies, and similar organizations whose membership rolls constitute a Grade A list of locker prospects.

"This type of advertising is priceless to us," Mr. Laughlin declares. "On hearing the words 'locker plant' the average individual pictures a stack of frozen fish and a barrel of ice. Our scheme of plant visitations is the most effective method we have found of combatting this idea and of impressing the true facts about locker storage on the public mind."

Mr. Laughlin is careful not to advertise this offer, however, for fear that he would be swamped by childrens' clubs and other groups whose visits to the plant would mean little or nothing in the way of new locker customers. To avoid being placed in the embarrassing position of having to refuse such organizations, Mr. Laughlin has made a policy of extending the invitation only by means of personal contact.

Mr. Laughlin extends his dime-a-head offer even further by making this proposition: if any member of one of the visiting organizations rents a locker, part of the first year's rental is paid back to the treasury of the organization to which the new renter belongs.

The amount of such rebates varies with the amount of the rental fee. On a $10 rental Mr. Laughlin turns back $2 to the organization, on an $8 rental the return is $1.50, and on a $6 rental it is an even dollar.

Mr. Laughlin's Carrier-equipped plant, with its 1,080 white-painted hemlock lockers, is about a year and a half old. Located right in the city of Astoria, about 65% of its customers are urban dwellers.

The two-story 50 x 50-foot building is located on the side of a hill, and has a street entrance on both floors. Offices and locker room are located on the second floor, while the chill room, processing room, receiving room, and all other units are on the first floor.

The plant is equipped with two compressors, one of 10 hp. and one of 7½ hp. The two operate in tandem, automatically.

The steam boiler used for heating the offices and other non-refrigerated portions of the plant also provides steam for blanching produce preparatory to quick freezing.

Problem of cleaning the locker room floor has been simply solved by Mr. Laughlin—he uses an ordinary vacuum cleaner with very satisfactory results.

Mr. Laughlin makes a charge of 2 cents per pound for blanching and packing vegetables which are brought to the plant prepared for processing. He charges 1¼ cents per pound for cutting and wrapping meat, 1½ cents for cutting and wrapping wild game, 50 cents for skinning deer, elk, and similar game animals.

Mr. Laughlin has had little trouble in collecting locker rental fees. He sends a statement on the first of the month to each locker renter whose bill comes due that month.

"The real reason for the prompt payment," he explains, "is that every patron must pass our office to reach the locker room. The ones who owe us money soon get feeling so guilty about facing us that they pay off in short order."

Hunters Are 'Fair Game' For Toledo Promoters

TOLEDO—Toledo Food Lockers is not waiting for the sportsmen to bring their hauls into its locker plant. Instead, this aggressive company is carrying its promotional story on fish and game freezing and storage right to the sportsmen by having this information printed on 8 x 10-inch placards which are tacked to trees and fenceposts in strategic hunting and fishing localities within a radius of 10 miles of its plant.

Part of the text of this placard advertising is quoted here: "Quick frozen at 30° below zero. Fishermen, hunters, don't tell them about it—show 'em! Express your fish and game to yourself in care of Toledo Food Lockers. We will immediately process it and store it in an individual locker to which you have your own key. Enjoy eating your fish and game the year around."

All-Steel Offers Key Cabinet For Lockers

AURORA, Ill.—A key cabinet of standard construction such as is used in hotels, institutions, and factories but finished in ivory baked-on enamel to match the finish of the company's frozen food storage lockers is now being offered by All-Steel-Equip Co. as a supplement to its line of food locker equipment.

The cabinet is of book type, made up of back and cover sections with one or two center leaves. Each leaf contains label holders and hooks to accommodate 102 keys, so a total capacity of 612 keys is made possible.

Labels are numbered to correspond with locker numbers. In addition, patrons' names may be written on these labels if desired.

A secure hasp for padlock makes it possible to lock the cabinet up when not in use.

New Frozen Foods Company Organized In California

SAN BERNARDINO, Calif.—Fontana Frozen Foods, Inc. has been organized here with a capital of $25,000. Directors are: C. C. Newland of Redlands, Calif.; E. D. Ashdill of San Bernardino; and D. V. Maurice of Los Angeles.

WILLIAMS ICE-O-MATIC REFRIGERATION

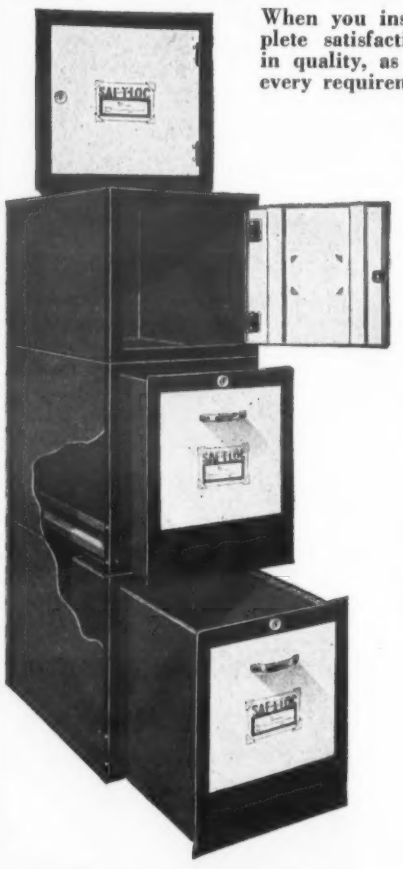
PRESENTS NEW SENSATIONAL STYLING

Be sure to attend the FIRST SHOWING of this NEW LINE of COMPRESSOR units in our booths Nos. 21 & 144 at the exposition. Also FIRST SHOWING self contained truck refrigeration unit.

WILLIAMS OIL-O-MATIC HEATING CORPORATION
Bloomington, Ill.

Not 1 But 3 Types of Food Storage Lockers

Master's line of Food Storage Lockers consists of three main types in 30 different sizes—a type and size to fit every need. This wide range of types and sizes was developed as a result of our vast experience and knowledge, gained as exclusive manufacturers of food storage lockers. No matter what your requirements—Master can supply them.



When you install Master, you can be sure of complete satisfaction because Master delivers the best in quality, as well as a locker that will meet your every requirement no matter which type you prefer.

SAF-T-LOC 18 sizes. Shipped knock-down. Saves on freight and erection costs. Has new snap-on device.

"2 in 1" Convertible

SAF-T-LOC Two keys — Two doors. Each compartment individual —can be converted into one large locker.

HyDroLoc Completely individual. Has unusual flexibility for cleaning.

Send for details

Get the facts—learn why Master Lockers are outstanding in ease of assembly and flexibility.

Master Lockers are endorsed and sold only through distributors of refrigeration and insulation.

See them at
Booth 46
Chicago Show
Jan. 13-16

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

Nearly 200,000 Masterbuilt Lockers in Use

Tripl-Seal Diaphragm Valve

Because of the small amount of operating movement in our Diaphragm Valve, the multiple diaphragm is never deflected past its normal center. This greatly prolongs its life. A single turn only is necessary to open or close.

Valves are furnished in two-way, three-way and angle type—flared or solder type ends—and in complete range of all necessary sizes.

We extend you a cordial invitation to see and examine these valves at our booths Nos. 120 and 121 at the All-Industry Refrigeration and Air Conditioning Exhibition, Stevens Hotel, Chicago, Jan. 13-16, 1941.

MUELLER BRASS CO.
Port Huron, Michigan

COOLMASTER by KRAMER

White for Bulletin R-141
KRAMER TRENTON CO. TRENTON, N.J.

SOFTNESS

You get it in WOLVERINE TUBING
—Buy From Your Jobber—
WOLVERINE TUBE CO. DETROIT

Air Conditioned Lobby Aids Customer Comfort in Mississippi Locker Plant

The 3-ton self-contained air conditioning unit at the right keeps patrons cool while they pause in the plant's lobby.

* * *

COLUMBUS, Miss.—An air conditioned lobby, attractively decorated and modernly furnished, is one of the highlights of the locker plant designed and built for Columbus Ice Co. by McGregor's, Inc., Frigidaire distributor in Memphis.

Cooled by a 3-ton self-contained Frigidaire conditioner which keeps the room at a temperature of 80° F. the year around, the plant's lobby is partially insulated and completely soundproofed with Celotex paneling on walls and ceiling. It is said to be the first air conditioned locker plant lobby in the South.

Wainscoting of the lobby is California redwood. The floor is covered with hard-surface rubber tiling with an inlaid design in the center. Overhead lighting is provided by fluorescent fixtures. Tables and chairs add to the convenience of customers and create a "livable" atmosphere.

Outside of the building, too, was made as eye-appealing as possible. The locker plant was installed in an 80 x 30-foot end of the ice plant which was partitioned off from the main building. The part of the frame structure which housed the locker plant was coated with glistening white weatherproof paint. A facade of plastered brick was built over the front section of the building. The two wide office windows in this addition were fitted with Venetian blinds. A Neon sign reading "Frozen Food Lockers" was placed over the door.

Refrigeration for the plant is supplied by one 5 hp. and one 1½-hp. compressor, both coupled to evaporative condensers. Frigidaire vacuum-plate coils are located in the locker and quick-freeze rooms, with forced air blower units supplying the chill room.

An 18-foot lean-to structure on the side of the main building is used for the processing of vegetables. It is equipped with hot running water, tubs, garbage disposal units, and all the other necessary paraphernalia.

Size of the plant was so carefully matched against the number of potential patrons that every one of the 360 lockers is already rented.

Arkansas Hotel Installs Own Locker Plant

JONESBORO, Ark. — So that it might offer its guests a wide variety of vegetables, meats, and sea foods in or out of season and at considerable savings, Hotel Noble here has installed some quick-freeze and locker storage facilities for its own use.

Previously, explained Owner Crawford Noble, the hotel had difficulty in filling the orders of guests who requested out-of-season products.

Now, however, these products are obtained in quantity in season when their cost is down, are prepared by the hotel's kitchen staff, and are then frozen and stored for use at any time of the year. Sea foods, most difficult of all to obtain in this locality, are shipped direct from the New Orleans market and are immediately stored in the lockers.

Yankee Ideals of Thrift and Good Food Draw New Englanders to George Crutch's Locker Plant

By Henry Knowlton

LITCHFIELD, Conn. — Go down the hill to the mill pond at the edge of this sleepy little New England hamlet and you will find the first refrigerated locker storage plant to be erected east of the Pennsylvania line. George R. Crutch, who says he was "20 years a plumber and 20 years an ice man," claims to have invested nearly $25,000 in the model 440 locker plant.

The plant is equipped with the Armstrong Cork Co. "Polar Chest system" of lockers housed below the plant's floor level and is powered by a York 7½-ton ammonia machine. Flash coils are used for all cooling work.

No butchering is done at the Crutch plant, as in the state of Connecticut all slaughtering must be done in the presence of a physician. Mr. Crutch reports that he does not have time, anyway.

Since the plant was opened a few weeks ago some 100 lockers have been rented, and meat is going into storage at the rate of about 600 lbs. a day, which is about all Mr. Crutch and his assistant can handle. He now charges 1½ cents a pound for processing, and 3 cents a pound for smoking and curing (which is done outside) but states that it will be necessary to raise the 1½ cent rate to come out on top.

So far the plant is handling both packing house and native beef and pork. Much venison was in the cooling room and one coon, which Mr. Crutch says makes "good eatin'."

Mr. Crutch is not a bit worried about renting all the lockers, because up to the present time he has been able to rent two spaces to almost every customer, at the rate of $15 per year each. One well-to-do member of the Litchfield community even rented a whole bank of lockers for his own exclusive use.

The banks of lockers are flush with the plant floor, and have linoleum tops. They are raised from the refrigerated, insulated, space by means of a special hoist provided for the purpose. Locker temperature is zero.

All quick freezing is also done on banks of shelves which are raised and lowered by the same hoist. These are let down into a space kept at minus 20° F. Cooling is handled by flash coils, and no forced air or contact plates are used in this quick-freeze process.

Meats received by the plant are first taken into a small room where the body heat is cooled out and then into a "cooling room" which is equipped like a large walk-in refrigerator. They are stored here until ready for processing.

Mr. Crutch has facilities for grinding hamburger and making sausage, but has not started handling vegetables as yet.

Like everything else in the village of Litchfield, the Crutch locker plant is immaculate, inside and out. This time a pioneer has gone east—not west—to start a business that appeals to the Yankee ideals of thrift—and good food.

LOCKER PLANT BRIEFS — News of Plants Completed, Under Way, or Contemplated

PORTLAND, ORE.

PORTLAND, Ore.—Dan Kienow, operator of a chain of grocery stores here, has announced that his new $250,000 supermarket at West Burnside St. and 23rd Ave. will contain some 300 refrigerated food storage lockers for rental use by the market's patrons.

This will mark the first location of food storage lockers within easy access of Portland's wealthier residential section.

MONTICELLO, IOWA

MONTICELLO, Iowa — Farmer's Mutual Creamery Co., which operates a 300-locker frozen food storage plant here, plans to add another 300 lockers.

MERRILL, WIS.

MERRILL, Wis. — Schumacher's Frozen Food & Locker Plant, with 350 lockers, has been opened here by Elroy and Roger Schumacher.

PORTLAND, ORE.

PORTLAND, Ore.—Six hundred refrigerated food storage lockers are contained in the new business building recently opened in the Lents district here by R. J. Johnson and Frank Eberhard.

The business will be operated by Mr. Johnson, a local feed dealer. Space in the front of the building has been leased to David Royle, who will operate a grocery and meat market.

MATTOON, ILL.

MATTOON, Ill.—A $10,000 refrigerated locker plant has been installed here in a building which was remodeled to house this new enterprise. Russell Zellers is proprietor. operation about Dec. 1, according to Russell Zellers, proprietor.

Rental price of the plant's 500 lockers vary from $10 to $14 per year, depending upon size. Processing charges are set at 1½ cents per pound.

PETERBOROUGH, N. H.

PETERBOROUGH, N. H.—A cold storage plant with capacity for approximately 17,000 boxes of fruit is being constructed at the Morrison Farms here. An ammonia refrigeration system is being installed.

TOLEDO, WASH.

TOLEDO, Wash.—Karlen Creamery Co. has opened a 156-locker cold storage plant here.

NEW GLARUS, WIS.

NEW GLARUS, Wis. — General plans have been approved by the state for a locker plant proposed here, to be erected by the Green County Frozen Food Market.

DOTHAN, ALA.

DOTHAN, Ala.—An $18,000 cold storage and quick freeze plant will be constructed here by W. Perry Calhoun.

GREENPORT, L. I.

GREENPORT, L. I.—Quick-freezing units with a capacity of 300 gallons a day each have been installed in the new $200,000 oyster plant opened here by Bluepoints Co., Inc., a subsidiary of General Foods Corp. The quick-freezing process requires about an hour and a half.

DALLAS, TEX.

DALLAS, Tex.—Dallas Air Conditioning Co., Inc. has been awarded contract for installation of an additional 100 frozen food lockers in the plant of Superior Frozen Food Co. Original plant had locker facilities for 225 patrons.

HOBSON, MONT.

HOBSON, Mont.—Phillips Cash Store has installed a 100-locker refrigerated storage plant here.

DALLAS, WIS.

DALLAS, Wis.—Alvin Tietz has started the installation of a frozen food locker storage system here.

WARREN, MINN.

WARREN, Minn.—Warren Co-Op Creamery Association has approved a project to construct a cold storage locker and produce plant at an estimated cost of $10,000. An initial 300 lockers will be installed in the 45 x 100-foot building. R. E. Melbo is plant manager.

Main Panel of air conditioning system in a large restaurant showing 24 Allen-Bradley control units.

Prevent Shutdowns and Servicing Expense with Allen-Bradley Starters

A-B Allen-Bradley

Shutdowns of air conditioning and heating equipment . . . due to starter troubles . . . can be prevented.

Just specify Allen-Bradley solenoid starters. They have double break, cadmium silver contacts that won't stick, burn, or weld. There is a warning in every Allen-Bradley starter that says—"Never clean, dress, or file the contacts." This means that you install an Allen-Bradley starter . . . and forget it. There is no contact maintenance.

Allen-Bradley solenoid starters have no bearings, pins, or flexible jumpers. There is nothing to get out of order.

And Allen-Bradley starters are easy to install, too. There is generous wiring space; the white interior is helpful during installation in dark corners; the accessible terminals make connections easy. There are lots of knockouts.

Use Allen-Bradley trouble-free starters on your next job. They will please your customer, too.

Allen-Bradley Co., 1313 S. First St. Milwaukee, Wis.

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL

Don't Miss a Thing!

If a thing is worth doing, it is worth doing well. And the most successful business men are those who apply that rule in getting information about their business—they "don't miss a thing."

You no doubt receive a lot of free reading matter. Some of it may touch one phase of your business, other pieces may treat a second phase. But why be satisfied with "a smattering of ignorance," with just PIECES of the knowledge you need? Why not get ALL the pieces, and see them in their relation to the WHOLE?

Firms you represent no doubt provide you with information about their products and activities. By why not learn what the OTHERS are doing?

To get the WHOLE PICTURE, to know the latest about every branch of the industry, to keep up with your competitors and their plans, read Air Conditioning & Refrigeration News. It is the ONLY publication devoted to every phase of the refrigeration and air conditioning industry.

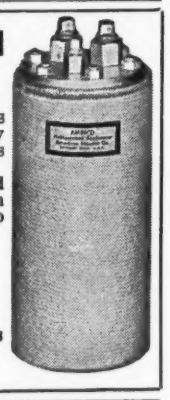
Every week for a solid year—52 BIG ISSUES—the News will come to you for just $4.00. You'll find it the most profitable investment of 1941.

PREVENT WAX and CARBON
with an AMINCO Oil Separator

Aminco Oil Separators remove oil from gases as they leave the compressor and return it automatically to the crankcase; preventing oil-logged evaporators and increasing the efficiency of the unit.
Helps to prevent the formation of hard carbon and wax deposits by separating entrained moisture from the oil and settling it in a sump where it can do no harm.

Send for Bulletin No. 14

AMERICAN INJECTOR COMPANY
1481 FOURTEENTH AVENUE, DETROIT, MICH.
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles
Export: Borg-Warner International Corp., 310 S. Michigan Avenue, Chicago, Ill.



DO NOT FAIL
TO SEE DEISLER

AT THE CHICAGO SHOW BOOTH 334
MANY SURPRISES IN STORE FOR YOU
THE CONDENSING UNIT LINE WITH EXCLUSIVE FEATURES
DEISSLER MACHINE COMPANY Greenville, Pa.
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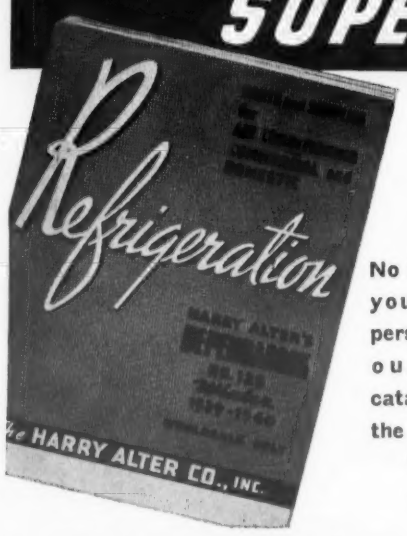

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Calculations For Radiant Heating Are Based on Emissivity Factor of Surfaces

By Henry Knowlton

In approaching the problem of calculations for a radiant heating system, the important thing to remember is that all surfaces constantly radiate heat, even though they do not contain any heating medium and may feel cold to the touch. Radiations from these surfaces are figured from their temperature to absolute zero, or minus 460° F. As a result, any surface with a temperature above zero may be said to radiate heat.

The amount of heat radiated from any surface is not only governed by the temperature of that surface, usually known as the Mean Radiant Temperature, but also by an "emissivity factor," which is the relationship between the heat radiating characteristics of that surface and a "black body." A black body is theoretically the perfect radiator, and therefore, has an "emissivity factor" of 100%, when radiating heat to surroundings at absolute zero.

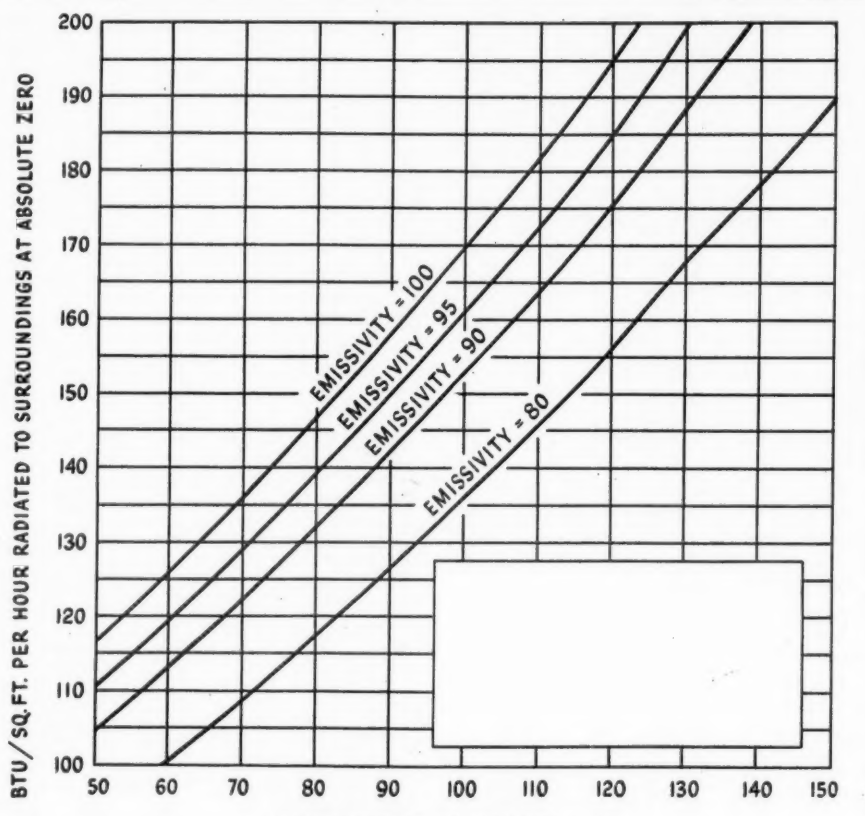
Starting with the theoretical black body as 100%, other materials have been given emissivity factors based on their ability to radiate heat. Both surface characteristics and color have a direct effect on this relationship. According to T. Napier Adlam, the percentage, or emissivity factor, may go as low as 50% for a surface covered with gold bronze paint, and might be considerably lower for a polished metal surface with a pronounced ability to reflect light and heat rays.

The human skin has been found to have an emissivity factor of approximately 90%. Ordinary plaster, concrete, and other rough surfaces encountered in most modern building construction have about the same factor.

Thus any surface has two characteristics of importance to these calculations—Mean Radiant Temperature and emissivity. The surface temperature of walls, ceiling, windows, and floor of a room or building must be assumed, or measured, before the amount of heat radiated from these surfaces can be calculated. In normal climates these temperatures might be assumed at 50° F. for an outside wall, 55° to 60° F. for floor, ceiling, or inside walls, and 40° F. for glass.

The amount of heat radiated from surfaces at various temperatures, corrected for several emissivity factors, from 30° to 600° F., are given in a formula and table on Page 721 of the eighteenth edition of the Heating, Ventilating, Air Conditioning Guide. These quantities have also been reduced to a series of curves by J. B. Fullman of A. M. Byers Co., and will appear in a revised edition of a brochure.

To calculate the heat radiated per square foot of surface at one temperature to surroundings at a lower temperature, it is only necessary to subtract the rate at which the cooler surface gives off heat from the radiating rate for the warmer surface.



J. B. Fullman's curves for obtaining amount of heat radiated at various surface temperatures and emissivity factors.

Assuming a skin temperature of 80° F. and an emissivity factor of 0.90 for skin, walls, and surroundings, the heat loss at absolute zero would be 132 B.t.u. per sq. ft. per hour. If the room in question has a Mean Radiant Temperature of 60° F., the average intensity of radiation from walls, floor, and ceiling would be about 113 B.t.u. per sq. ft. per hour. By subtraction, the body would lose 132 minus 113, or 19 B.t.u. per sq. ft. per hour by radiation.

Mr. Fullman has found that the Mean Radiant Temperature of a room can be calculated, if the area, temperature, and emissivity factor are known or assumed for each surface. To do this the radiating rates for each surface are multiplied by the area of that surface, and the total radiating rates for the room obtained. Dividing this total radiation by the sum of the areas, an average radiating rate is found. The temperature corresponding to this average radiating rate is the MRT of the room.

To compute the radiant heat loss from a heated floor surface, the MRT of the other room surfaces must first be computed, since they comprise the surroundings to which the heated surface can radiate. (It should be noted that air temperatures are not taken into consideration at this point in the calculations.)

As an example, assume a room is 10 x 10 x 8 ft. high having walls uniformly at 60°, the floor at 80°, and the ceiling at 75° F. Again assume an emissivity factor of 0.90.

The walls have a radiating rate of 113 B.t.u. per hour and the ceiling has a radiating rate of 127 B.t.u. per hour. The heated floor has a radiating rate of 132 B.t.u. per sq. ft. per hour.

By multiplication we find that:

	B.t.u.
320 sq. ft. walls x 113 B.t.u. per sq. ft. per hr. equals..	36,160
100 sq. ft. ceiling x 127 B.t.u.	

(Concluded on Page 49, Column 1)

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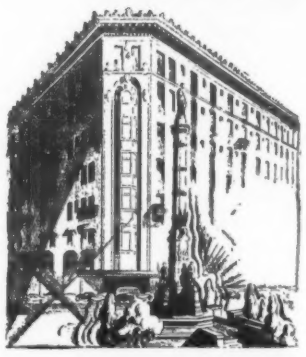

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(2) Wrought iron pipe fabricated by Crane Co. was laid on this foundation. One-half inch and ¾-inch pipe was used to heat the two-story building which measured 40 by 50 feet.

(3) Additional stone was then placed around the pipe to form the first floor construction. On the second floor pipes were laid over a cork insulation supported by steel beams.

(4) A 2-inch concrete slab was poured to form the finished floor. The heating medium is hot water, circulated by a ¼-hp. pump. Control of the system is by means of an indoor-outdoor thermostat regulating water temperature. Sarco Co. controls were used.

Condensation Problem Limits Radiant Cooling To Special Applications

(Concluded from Page 48, Column 4)

per sq. ft. per hr. equals.. 12,700
Total radiation from ceiling and walls 48,860

To find the average radiating rate of walls and ceiling we divide the total number of B.t.u. radiated by the total number of square feet of area and obtain an average radiating rate, by which we can get the Mean Radiant Temperature for these surfaces.

48,860 B.t.u.
——————— equals
420 sq. ft.

116 B.t.u. per sq. ft. per hour average radiating rate, giving an MRT of 63° F.

Again multiplying for the floor, we have 100 sq. ft. of surface times 132 B.t.u. radiated per sq. ft.—a total of 13,200 B.t.u. The average for the floor, of course, is 132 B.t.u.—which results in an MRT of 67° F.

By simple subtraction we have 132 B.t.u. minus 116, or 16 B.t.u. per sq. ft. per hour.

The radiant heat input from the heated floor would thus be:

16 B.t.u. x 100 sq. ft. of floor which equals 1,600 B.t.u. per hour.

Because the heated surface is presented to the room air at all times, the amount of heat transferred by conduction must be added to the above calculations. According to the best European experience this quantity amounts to about 80% of the normal heat loss calculations (based on surface and air temperatures) from a floor panel and approximately 50% from a ceiling panel.

Thus, in the example given above we have 100 sq. ft. of floor surface heated to 80° F. Assuming an air temperature of 65° F., the difference is 15° F. By multiplication we find that 15° F. (temperature difference) x 100 sq. ft. of floor surface x 80% equals 1,200 B.t.u. per hour.

So 1,200 B.t.u. by conduction to the air, added to the 1,600 B.t.u. radiated from the heated floor, gives a total of 2,800 B.t.u. for the room. This total quantity should balance the heat loss from the room figured by conventional methods incorporating losses through walls, glass, and by infiltration of air.

While it is possible to employ the pipes or panels used for radiant heating for summer cooling, this application is naturally limited by the problem of condensation on cooled surfaces in climates having average relative humidities or higher.

If a room has an air temperature of, say, 90° F., and a relative humidity of 50%, the floor, walls, or ceiling surfaces could be cooled to 70° F. without condensation. In such a case, the human body, with a surface temperature of 80° F., would lose a substantial quantity of heat to the cooled surfaces.

Should the relative humidity rise to 65%, as it often does in most cities located in the temperate zone, the floor or ceiling could only be cooled to 77° F. before condensation appeared, and this would approach body temperature to the point where it would not do a great deal of good. Every air conditioning engineer is familiar with humidity conditions much higher than 65%, as in New Orleans and Houston, Tex., where relative humidities often approach 100% and direct expansion cooling systems must be designed accordingly.

Thus there is little possibility that "radiant" cooling will replace conventional methods using refrigerating machines and direct expansion or water coils, except perhaps as an auxiliary to this type of system.

It is quite possible, however, that some combination of radiant cooling and chemical dehumidification would be feasible. With the latent heat load converted to sensible heat, as handled by some chemical dehumidifiers, it is possible that the sensible heat could be extracted, in part at least, by the use of cooled panels in the building structure. Other applications would be possible in dry climates, and places where "evaporative" cooling is now used.

In an extremely dry climate, it would be possible to run the water used by a radiant cooling panel through an evaporative condenser or cooling tower located outside the building, and thus reduce the internal temperature appreciably without raising the relative humidity, as is the case with the so called "evaporative systems" or "desert" coolers.

Certain special applications for radiant cooling have presented themselves in recent years, and show considerable promise. By introducing a refrigerated plate or panel into a warm operating room, for example, it has been found possible to keep surgeon and staff comfortable without reducing air temperatures surrounding the patient.

Experiments along these lines have been conducted by Dr. C. A. Mills of the University of Cincinnati, and described from time to time in AIR CONDITIONING & REFRIGERATION NEWS. Condensation is no problem in these special applications, as provision is made to drain the condensed moisture off the plates.

In both the field of radiant heating, and radiant cooling, theory and practice are developing together. Much of the work being done today is experimental in nature, but enough experience has been gained to justify more immediate progress. While many men close to the subject show anxiety over the possibility of harm from poor installations and improper applications, Mr. Adlam asserts, "There is no risk in the installation of a radiant heating system, if it is properly designed," and, he adds, "it is the **only** method of heating."

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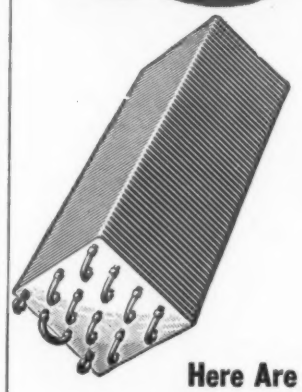

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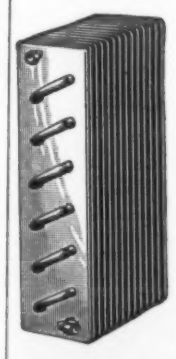

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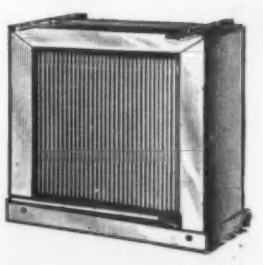

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Physician Surveys Advance of Air Conditioning In Medical Field

Dr. M. B. Ferderber Points To Wide Variety of Hospital Applications

PITTSBURGH — The progress made possible by air conditioning in varied fields of medicine is outlined in a paper presented by Dr. Murray B. Ferderber of the University of Pittsburgh School of Medicine before the Medical Society of the State of Pennsylvania recently. Entitled "Clinical and Physiologic Investigation of Air Conditioning," the paper appears in a recent issue of the Pennsylvania Medical Journal.

Dr. Ferderber points out that air conditioning has been valuable in operating and recovery rooms because it is "beneficial to operating room personnel and to patients, in preventing excessive fatigue, and drop in body temperature in the latter. Air conditioning has reduced the bacterial content of an operating room, but sterility of the air has not been obtained by these means."

Another important use for controlled temperature and humidity conditions has been found by Dr. Ferderber to be in nurseries used for premature infants. He reports that "a relative humidity of 65% and a dry bulb temperature of from 77° to 100° F. in nurseries have reduced the physiologic weight loss of prematures in the first four days of life from 12.4% of the birth weight in an ordinary nursery to 6% in a conditioned nursery.

"The number of days required to regain the birth weight is less in a nursery where the environment is controlled, and the survival rate, therefore, is much higher."

Dr. Ferderber also gives air conditioning a great deal of credit for the development of means used to create "artificial fever." "Production of fever in any part or the whole of the body is facilitated in a saturated atmosphere to give safer but more prolonged treatment periods," Dr. Ferderber states.

In studying "the exposure of persons to high temperatures for other than therapeutic purposes," Dr. Ferderber observes that this "produces an elevation of body temperature, an increase in pulse rate, and a white blood cell increase in effective temperatures from 84° to 92° F."

Control of atmospheric conditions in an oxygen tent requires "a dry bulb temperature of 65° F. and 50% relative humidity . . . where the oxygen content is 50% or more," Dr. Ferderber has found.

ALLERGIC PATIENTS AIDED

Citing the value of air conditioning to the allergic patient, particularly in the case of major operations, Dr. Ferderber says, "the allergic patient requires 75° F. dry bulb temperature and a relative humidity of 50% or lower in addition to an efficient air cleaner which will remove offending particles of 15 to 20 microns or smaller."

In his introduction to the subject, Dr. Ferderber recommends that physicians have a thorough understanding of "effective temperature" because "as physicians it is important that we understand not only the physiologic effects but also the technical information advanced by the engineering profession."

Speaking of the use of air conditioning in hospitals, Dr. Ferderber says, "the attention of the medical profession has been drawn to the hazards of surgery performed in extremely hot weather. In our haste to make conditions suitable for the surgeon we have neglected to a certain extent the desirable conditions necessary for the postoperative patient. In other words, a recovery room adjoining the operating room is quite necessary to continue the care of the patient operated upon because the dangers in the hours after are far greater than those during surgical procedures.

"Since the patient spends more time in the recovery than in the operating room, it becomes obvious that the air conditioned surgery is only one part of the hospital arrangement.

OPERATING ROOM CONDITIONS

"The conditions necessary for comfort in the operating room are approximately 68° to 69° F. effective temperature, which, when given in common terms, would mean a dry bulb temperature between 72° and 74° F. and a relative humidity of from 50 to 60%.

"Instead of relying entirely on a difference between outside and inside temperatures, we have used the effective temperature scale and have been able to produce fairly constant environmental conditions satisfactory to almost 90% of the occupants of the operating room.

"It was once stated that the body under anesthesia must be kept extremely warm, but we have shown in an experimental operating room that the greatest drop in body temperature was no more than four-fifths of a degree F. The bacterial content of a properly conditioned operating room tends to be lower than the nonconditioned, but sterility has yet to be reached as indicated by investigations recently completed.

"Further advantages of the recovery room are offered to the hyperthyroid patient who is ordinarily a poor risk but considerably worse in hot weather. Preoperative care of such a case should include residence in a controlled room prior to operation so that the excessive heat produced by increased metabolism may be dissipated into the environment.

"We believe that postoperative respiratory infections might be prevented if we can avoid moving the patient through various conditions, such as drafty corridors and elevators. Should it be necessary to operate on the allergic patient who suffers from extrinsic allergens, the recovery room with its methods of air cleaning would greatly aid in removing much of the risk involved.

"Since 65% of infant mortality occurs in the first few weeks after premature birth, it is obvious that more care should be given to this branch of medicine. The heat regulatory mechanism is not fully developed, and unless some means of maintaining desirable conditions are furnished, the body temperature of the infant may fall and result in serious complications and even death.

"The full term infant, on the other hand, usually has subcutaneous fat which acts as an insulator and reduces heat dissipation and maintains normal body temperature by greater heat production.

PREMATURE INFANTS

"It has been shown that a relative humidity of 65% and a dry bulb temperature of 77° F. are optimum for the premature infant to prevent loss of body weight. In some cases it is necessary to raise the dry bulb temperature from 77° to 100° F. depending on the weight loss and the general condition of the premature; but this additional heat will cause no change in the relative humidity of the total conditioned space.

"From a comparative standpoint the weight loss in the first four days of life is 12.4% in an ordinary nursery and 6% in the conditioned nursery. In addition the number of days required to regain the birth weight is considerably less in the conditioned nursery than in the non-conditioned nursery."

From these observations Dr. Ferderber concludes that "the premature infant has a better survival rate in controlled atmospheric conditions than in the ordinary nurseries."

FEVER THERAPY

Citing the development of fever therapy and the importance of saturated environments in producing a rise in body temperature, Dr. Ferderber states that:

"Walter M. Simpson has shown that an environment with a dry bulb temperature of 130° to 150° F. and a relative humidity of 35 to 50% will produce a rise in body temperature to 105° F. in from 40 to 60 minutes, while Houghten, the author, and Gutberlet have shown that in the presence of saturation the same rise in body temperature will occur in the same time with an approximate dry bulb temperature of 113° F."

Explaining this phenomena, Dr. Ferderber relates, "the human body attempts to maintain its own temperature and its own balance between heat produced and heat lost by dissipating sufficient heat over and above its own metabolic requirements. If we try to raise the human body temperature with dry heat, the human mechanism will attempt to throw off additional heat; but to produce a hyperprexia, it would be necessary to increase the heat source sufficiently high to overcome the heat loss from the body.

"In raising this dry bulb temperature so high the possibility of burns is great and many have occurred during the experimental period of fever therapy research. On the other hand, saturation will prevent heat loss from the body since wet surroundings cannot take up additional moisture from the skin."

Dr. Ferderber describes the use of an apparatus designed to produce saturated air of any temperature around any single portion of the body. Consisting of a rubber lined, insulated shell, the apparatus employs water sprays, adjustable to any desired temperature, to produce the required conditions.

The apparatus may be used to encase the patient's arm, leg, hip, or shoulder, and thus apply high temperature saturated air to any part of the body.

'FROZEN SLEEP' TREATMENT

Dr. Ferderber calls attention to "an unusual application of air conditioning found in cooling the human body for the treatment of neoplastic lesions. Refrigeration is applied locally to the lesion by passing chilled water of about 40° F. or brine solution through an apparatus to fit the structures treated.

"Artificial hibernation, on the other hand, consists of complete exposure of the body to low temperatures of about 50° to 60° F. by air conditioning methods. In direct contrast to fever therapy, the metabolic rate is reduced to a negligible figure and body function is arrested. The temperature of the human is lowered to around 90° F. for 72 hours or more, and it has been reported that there is a shrinking of the metastic lesions."

Dr. Ferderber's paper concludes with a discussion of the effects of high temperatures on workers, the advantages of using controlled atmospheric conditions in the application of oxygen, and the desirability of electrostatic precipitation in removing small dust particles in rooms occupied by allergic patients.

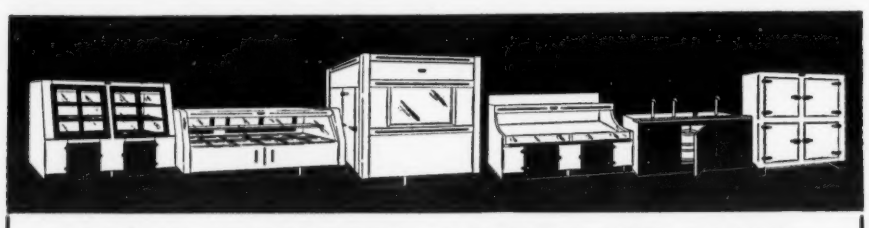
1940 Oil Burner Sales Reach All Time High

NEW YORK CITY—Home oil burner sales in 1940 reached an estimated 285,000 units, the greatest record in the history of the industry, according to Ray G. Whipple, president of Oil Burner Institute.

This compares with sales of 240,000 units in 1939, 157,000 in 1938, and 202,000 in 1937. Lowest recent year for the industry was in 1933, when sales totaled 83,000 burners.

Changes Sales Jobs

SANFORD, N. C.—Roger Purvis, salesman in the electrical department of J. L. Stricklin, Spring Hope, N. C., has resigned this position to join Lee Hardware Co. here.



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FRENCH LICK, INDIANA
T. D. TAGGART, President
Chicago Office: 221 N. Michigan Avenue
Phone ANDover 2233 • D. E. Manning, Manager

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, $2.00, additional words, four cents each. Three consecutive insertions, $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

ONE OF the largest refrigeration manufacturers has opportunity for man experienced in wholesale commercial refrigeration sales, contacting dealers in Illinois and adjacent western area. Preferably about 30 to 35 years old, single, living in territory and free to travel. Moderate salary to start, with excellent future opportunity. Write Box 1284, Refrigeration News, stating full details. Replies held strictly confidential. Our own organization knows about this advertisement.

DISTRICT SALES Manager in Chicago area for complete line of Patented Frosted Food Display equipment. Well known name with established acceptance. Selling thru distributors. Opportunity for large earnings in this fast developing industry. Booth at All-Industry Exhibition. Write giving full particulars. Box 1288, Air Conditioning & Refrigeration News.

SALES SUPERVISOR WANTED

SALES SUPERVISOR for Western Pennsylvania and New York State experienced in sale of refrigerator display cases, coolers, reach-in boxes, compressors, etc., by large, nationally known, long established manufacturer. Must have ability to locate, set up and train salesmen and dealers. Liberal straight salary and expense arrangement. Write stating complete details of experience and sales volume during past few years. Box 1287, Air Conditioning & Refrigeration News.

POSITIONS WANTED

EXPERIENCED commercial refrigeration, air conditioning, and heating sales engineer and sales manager. Qualified promotional sales merchandiser as well as capable of handling any sales organization. 12 years experience—desire connection with well rated concern. Free to travel. Permanent connection desired. Open for position any time after January first. Answer Box 1279, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

ROYAL'S QUALITY all porcelain cases insulated with four (4) inch sheet cork and complete food store fixtures line are now available to reliable distributors. Streamlined beauty and guaranteed quality. Exclusive features for profitable sales. Backed by over a quarter of a century experience. Write for distributorship details. ROYAL STORE FIXTURE COMPANY, 847 North Broad Street, Philadelphia, Pa.

BUSINESS OPPORTUNITIES

FOR SALE—A well established and profitable refrigeration and appliance service business. For full information write DIXON REFRIGERATION SERVICE, Vandergrift, Pa.

FOR SALE—Commercial Refrigeration Compressor Business and machinery. NO Debts. Having to Move. Must sell promptly. Write Box 1291, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

PURCHASERS and Liquidators of Surplus Refrigeration and Air Conditioning Equipment of any description such as—Compressors and Motors, Units of any size, Coils, Unit Coolers, Expansion Valves, Water Valves, Controls (all types), Beer Equipment and accessories. Please send full particulars or sample. R & R REFRIGERATION EQUIPMENT CO., 508 Morris Avenue, Bronx, N. Y.

EQUIPMENT FOR SALE

A CLOSE OUT of air conditioning cabinets less refrigeration equipment. Three sizes. Sizes to be mailed on request. Each cabinet is new and crated. Small size suitable for ⅓ h.p. installation, price $11.00. Medium size was made for use with ¾ h.p. installation, $16.00. Large size for 1½ h.p., $21.00. Each Cabinet contains the following: a Westinghouse motor and 16" fan also a filter. Larger cabinets also have a set of casters and an Ionizer. Above cabinets can be used for remote air conditioning installations. All prices F.O.B., Cleveland, Ohio. Box 1289, Air Conditioning & Refrigeration News.

BRAND NEW Westinghouse 1 to 2 ton Low-Sides available, complete with Walnut, Mahogany or Modern cabinets, filter, coils, fans, valves, etc. Simple to install, satisfactory in operation. Sold to you in original Westinghouse crates—$32.50 each. Also brand new ½ H.P. and 1 H.P. complete G-E units and full line "As Is" or Rebuilt Commercial units from ¼ H.P. to 3 H.P. "As is" ¼ H.P. units complete with motors as low as $5.00. Write ASSOCIATED REFRIGERATOR PLANT, INC., 3028 West Hunting Park Avenue, Philadelphia, Pa.

REPAIR SERVICE

CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

HERMETIC REBUILDING and Exchange Service General Electric—Westinghouse—Majestic and Grunow Units, Compressors and parts. Immediate shipment. Old unit can be returned later in our crate. We also exchange floats, Evaporators, Controls. Write for price list specify S6. SERVICE PARTS CO., 1101-03 N. 24th Ave., Melrose Park, Ill.

SAVE YOUR Trade-Ins—General Electric, Grunow, Westinghouse, Crosley, Servel, Gibson, Bohn Hermetic, etc. Complete Renovating Service, Respraying. Use our Ovens for Dehydrating. Compressors Rebuilt or Exchanged. Controls, Parts (The Hard ones to get). REFRIGERATOR SERVICE CORP., Minneapolis, Minn. Write for circular.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Refrigeration Installation For Clothes Storage Builds Business And Profits For Waco, Texas Cleaning Establishment

WACO, Tex.—Graphic example of how a cleaning establishment can build up its business and add to its profits by installing a refrigerated vault for clothes storage is the case of the Buchanan Bros. (Ralph B. and H. C.) here.

Some two years ago the Buchanans decided that such a vault would be a worthwhile addition to their cleaning establishment, and so they built in one which measured 28 x 32 feet and had an 11-foot ceiling. This vault they insulated with 6 inches of blown rock wool in the walls and ceiling and 4 inches of batt wool in the floor.

Refrigeration is supplied by a 3-ton Carrier unit. Temperature in the vault is maintained at 45° F., humidity at 60%.

The clothes storage business which was inaugurated with the opening of this vault has steadily expanded. Storage business handled this year will more than triple the business received in the vault's first year of operation. In that first year storage revenues totaled between $300 and $400; this year they will reach well in excess of $1,200. The firm's cleaning business has gained commensurately.

Installation of the storage vault has opened a number of new avenues of business and revenue to the Buchanans. For instance, the man who takes a suit of clothes to the Buchanan plant at the end of the season for that suit can have it cleaned, pressed, and stored for only $1.

Length of the storage period is determined by the weather. A summer suit (provided it is wool) can be stored through the winter, while winter suits are generally left in the vault all through the summer season.

Facilities also have been provided for the gassing of clothes left for storage but not cleaned and pressed. Charge for this service is on the basis of 4% of the value of the apparel.

Sections of the vault are rented to customers who may desire to store a quantity of apparel. These sections usually consist of 3-foot lengths of the rack from which the clothes are hung. This service also is charged for at the rate of 4% of the total value of all of the apparel stored.

The company also makes a specialty of storing furs.

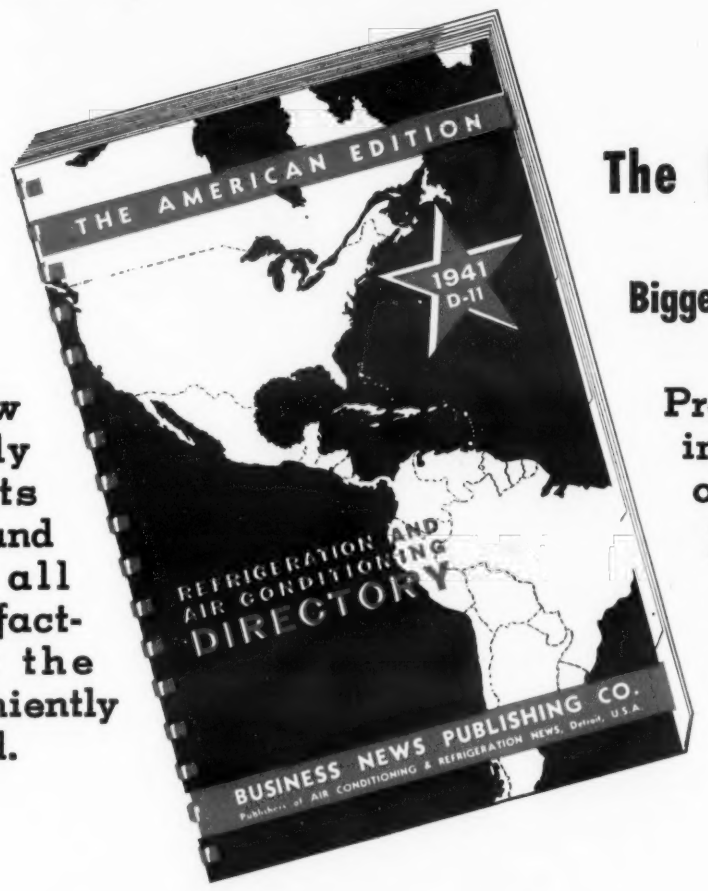
One source of real volume business is in the storage of uniforms for the athletic teams, bands, and drill corps of the Waco high school and Baylor university.

The Buchanans advertise their storage vault as "open to inspection at any time," but have found that patrons seldom take them up on this offer.

Ready Next Week!

The American Edition

A completely new source-of-supply reference. Lists products, names and addresses of all American manufacturers serving the Industry. Conveniently cross indexed.



The New 1941 Directory

Bigger & Better Than Ever Before

Produced to save you time in contacting new sources of supply all year long. Larger, easier-to-use pages, tab indexed section dividers, plastic bound tor flat opening. A new market data section.

Copies of the colorful 1941 Refrigeration & Air Conditioning Directory are now rolling off the presses. Next Monday, January 13, the new Directory will be available for distribution. As a buyer of complete equipment, parts, or supplies, you will find the Directory a valuable source of supply reference to have handy all year long. The new edition is as up to date as 1941. It accurately classifies products of all manufacturers serving the industry in ready reference form, gives you also the manufacturers' addresses. A new and complete list of refrigeration supply jobbers is also included, and a new market data section which you will find useful and interesting. Order your copy of the Directory today. 204 pages. Price just $1.00 per copy.

IMPORTANT: 3,000 copies of the new 1941 Directory will be distributed from the Business News Publishing Co. booths (110-111) at the All-Industry Exhibition. If you come to Chicago, stop in for your complimentary copy. Distribution of this Directory will be our special contribution to the success of the All-Industry Exhibition.

Contents of the 1941 Directory:

★ **MARKET DATA SECTION.** Information concerning equipment sales in 1940, plus forecasts of 1941 sales, compiled by AIR CONDITIONING & REFRIGERATION NEWS.

★ **ALPHABETIC INDEX OF MANUFACTURERS.** Complete names and addresses of nearly 1,000 manufacturers serving the industry.

★ **AIR CONDITIONING SECTION.** Classified product listings of equipment and parts for mechanical comfort cooling.

★ **COMMERCIAL REFRIGERATION SECTION.** A "where to buy it" reference for condensing units, fixtures, liquid cooling, low temperature and locker storage equipment.

★ **HOUSEHOLD REFRIGERATION SECTION.** Complete product information on complete units, parts, accessories, and materials.

★ **PARTS SECTION.** Covers component and replacement parts, tools, accessories, materials, and supplies.

★ **JOBBERS INDEX.** Complete names and addresses, with locations of branch stores, of 224 jobbers of parts and supplies in the United States and Canada.

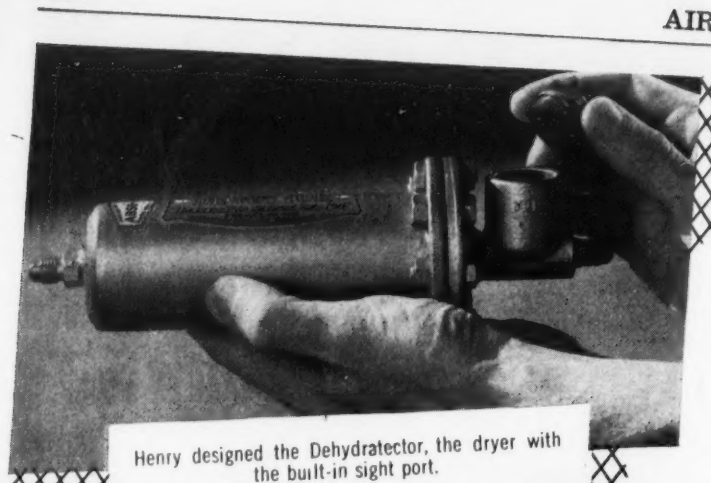
★ **CROSS REFERENCE INDEX.**

Order from your jobber or:

Business News Publishing Co., *Publishers of Air Conditioning & Refrigeration News*

5229 Cass Avenue, Detroit, Mich.

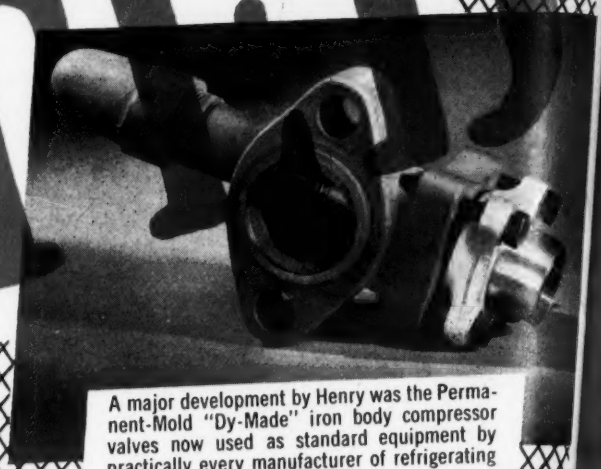
WHO GAVE YOU THESE FEATURES FIRST?



Henry designed the Dehydratector, the dryer with the built-in sight port.

It was Henry that gave the industry the dispersion tube for dryers.

Henry introduced the Diaphragm Packless Valve with Balanced Action, Ports-in-Line and the Ovaline hand wheel.



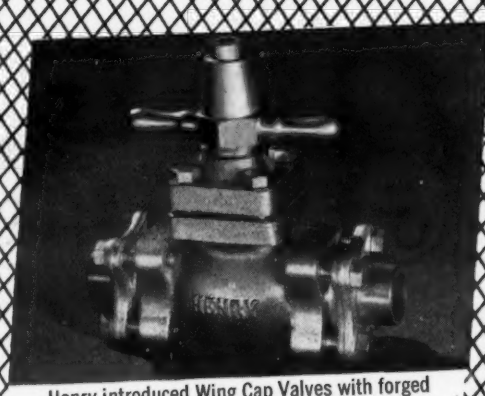
A major development by Henry was the Permanent-Mold "Dy-Made" iron body compressor valves now used as standard equipment by practically every manufacturer of refrigerating equipment.

The one-piece drawn brass shell for dryers and strainers was another Henry development.

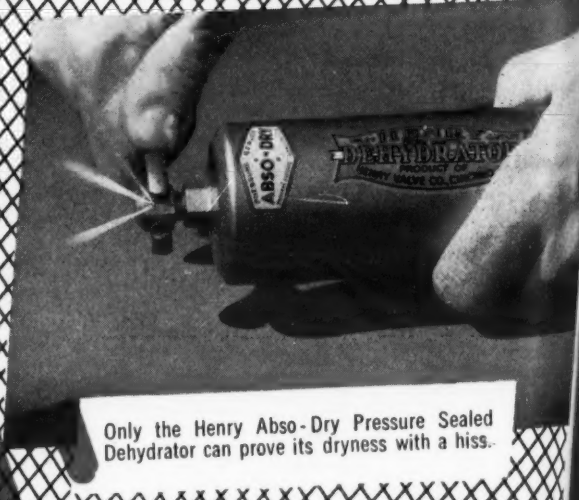
Henry research developed the welded-steel Y-strainer with ports-in-line, minimizing pressure drop.

Henry's patented forged-steel distortion-proof flange makes a tongue and groove recessed gasketed joint with shell.

The automatic pressure relief valve with push rod for emergency reseating was designed by Henry engineers.



Henry introduced Wing Cap Valves with forged steel companion flanges and separable brass sleeves which can be rotated, permitting ready alignment—eliminating transmission of soldering heat to internal valve parts. Cap can be inverted and socket used to operate valve.



Only the Henry Abso-Dry Pressure Sealed Dehydrator can prove its dryness with a hiss.

Henry products will always be better!

It is easy enough to live in the past, to relax in the light of yesterday's achievements. It would be easy for us to point to these famous firsts and to stake our future on them. But Henry's achievements of yesterday are only a challenge to the developments of tomorrow. Henry's contributions to the advancement of refrigeration and air conditioning are just a yardstick to measure what Henry will do in the future.

Far-sighted planning, thoro research; engineering skill and vision . . . Henry insists on all these. Henry engineers have a quick grasp of the value of new methods, new materials, new designs, with a sure understanding of their importance to you.

Henry Products are years ahead in engineering and economy. When you use them, you assure yourself of the highest quality, the best performance. You can always expect the best things *first* from Henry.

Your jobber sells Henry Products . . . ask him for them.

HENRY VALVE CO.

HENRY

VALVE COMPANY

1019 NORTH SPAULDING AVE.

CHICAGO, ILLINOIS

★

VALVES • STRAINERS • DRYERS FOR REFRIGERATION AND AIR CONDITIONING • ALSO AMMONIA VALVES AND FORGED STEEL FITTINGS